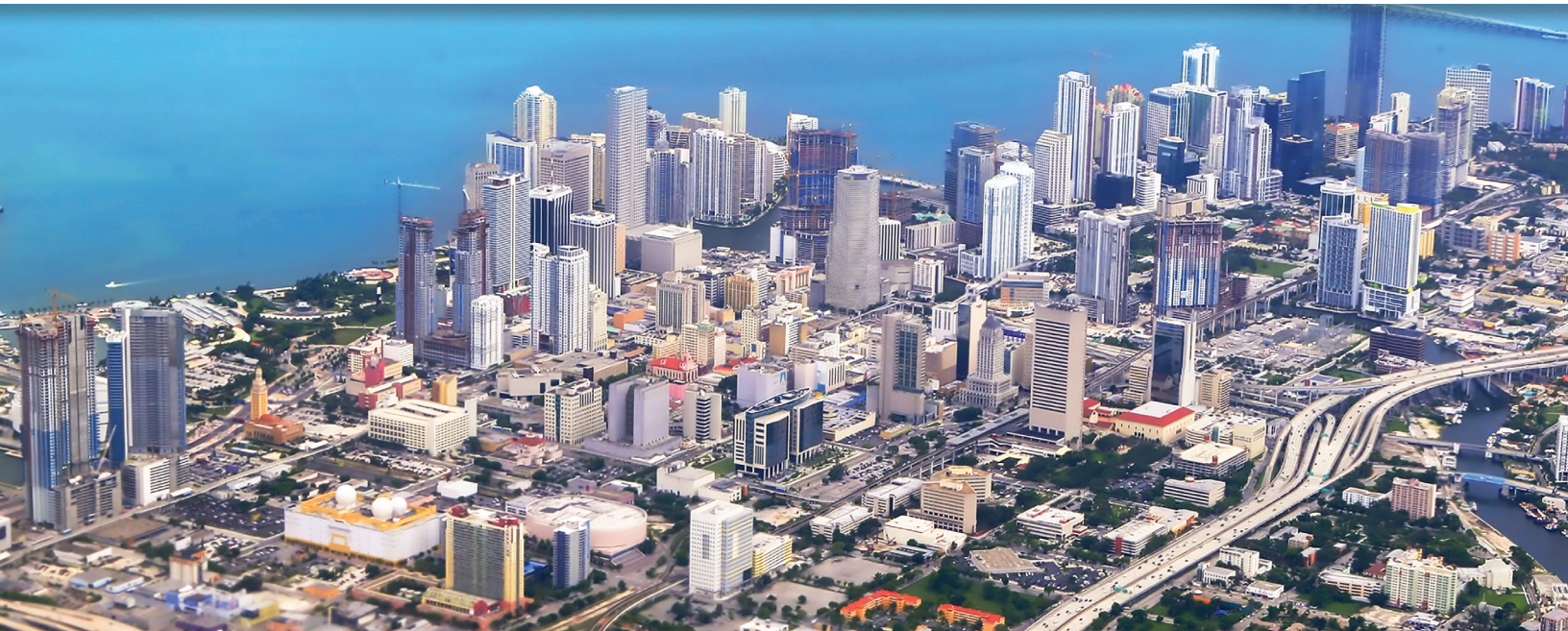
Florida Department of Transportation

2015 Performance Report



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WHAT are performance measures?

Performance measures are usually indicators of progress toward attaining a goal, objective, or target (a desired level of future performance). The Florida Department of Transportation's (FDOT) Performance Management/Measurement Policy provides the basis and foundation for that which follows.

HOW does FDOT use performance measures?

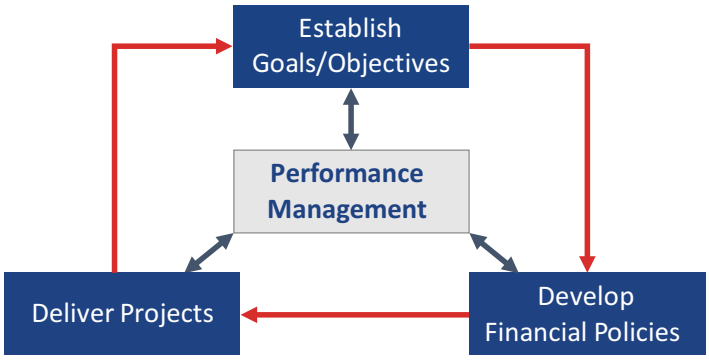
Because Florida's transportation system improvement needs exceed available funding, resources must be invested in the most strategic, effective and efficient ways possible. Performance measures provide useful "feedback" and are integrated into FDOT's business practices on three levels:

At the strategic level – Performance measures help to *establish and inform goals and strategic objectives*, and to monitor progress in carrying out FDOT's Mission. Performance measures also communicate progress toward achieving goals in various programs and plans such as the Florida Transportation Plan, the Strategic Highway Safety Plan, and the Freight Mobility and Trade Plan.

At the decision-making level – Performance measures are used to *inform and assess the financial policies* for allocating funds across programs such as highway preservation, system expansion, and public transportation. These programs are defined in the Program and Resource Plan.

At the project delivery level – After projects are selected, performance measures help to *monitor the efficiency and effectiveness* of projects and services in the Five Year Work Program. The measures also support organizational and operational improvements.

As shown in the **Performance-Based Planning and Programming Process** graphic below, performance management is at the heart of FDOT's planning and programming process.



WHY do we use them?

FDOT uses performance measures to:

- Assess how well Florida's multimodal transportation system is functioning
- Provide information to support and inform decision-making
- Assess how effectively and efficiently transportation programs, projects and services are being delivered
- Determine customer satisfaction levels
- Demonstrate transparency and accountability to Florida's citizens and to foster collaboration with FDOT's transportation system stakeholders

WHAT does FDOT measure?

Performance reports help to evaluate results in relation to our mission execution and other priorities, plans and programs. Each performance report is listed below along with some of the associated performance measures:

Safety – Fatal and serious injuries related to impaired driving, aggressive driving, distracted driving, at-risk drivers, vulnerable road users

Preservation – Percent of pavement and bridges meeting condition standards, percent of maintenance activities (such as roadway striping, guardrail repair and mowing) that meet department standards

Mobility – Vehicle miles travelled, transit ridership, freight tonnage, freight and port access, hours of delay, travel time reliability, commute times, miles severely congested

Economy – Return On Investment of FDOT programs, capacity funds for the SIS, Florida share of U.S. trade, Florida value of freight, construction projects completed on-time and within budget

Environment – Air quality, water quality, impacts to the physical, natural and cultural environment, vibrant and healthy communities, customer satisfaction

For more information

In addition to this report, the Florida Transportation Commission annually issues a Performance and Production Review. For more details on FDOT's performance reporting, including a MAP-21 Florida Performance Report, go to FDOTPerforms.org.

Florida Department of Transportation 2015 Performance Report

Safety

Safe and Secure Travel

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SAFETY

This report is part of the Performance-Based Planning and Programming Process used by the Florida Department of Transportation (FDOT). For a description of that process, updates to this report and other transportation performance reporting initiatives of FDOT, go to FDOTPerforms.org.

INTRODUCTION

Transportation system safety and security are among Florida's highest commitments to its residents, businesses, and visitors. Safety improvements save lives, enhance quality of life, and support the state's economic competitiveness. It is also important to be ever vigilant about transportation system security for people and freight without compromising mobility.

Transportation safety is important for every mode of transportation. It is affected by many factors, such as driver behaviors, infrastructure conditions, innovations in technology, enforcement and education, and even by weather and the natural environment. It is vital that federal, state, regional and local safety partners and other stakeholders work together to improve transportation safety.

The Strategic Highway Safety Plan (SHSP) provides a foundation for FDOT's safety activities and plans through engineering, enforcement, education, and emergency response.

FDOT's long-term vision is zero deaths on Florida's roadways. To help achieve this vision, safety is a focus area in numerous FDOT plans, including the Florida Strategic Highway Safety Plan (SHSP) and the Florida Transportation Plan (FTP). Safety is front and center with a goal to "Provide a safe and secure transportation system for all users" with a specific objective to "Reduce by 5 percent annually the number of highway fatalities and serious injuries." FDOT also collaborates with its safety partners to implement Florida's SHSP to reduce fatalities and serious injuries by strategically concentrating resources on the problems with the greatest potential for improvement. The SHSP provides a foundation for FDOT's safety activities and plans.

The SHSP is led by a group of dedicated, public and private sector safety partners working together to achieve successful implementation. In 2014, the five-year rolling average for traffic fatalities dropped for the seventh consecutive year. This trend is a result, in part, of the SHSP efforts and initiatives. Despite safer highway design, safer motor vehicles, increased safety belt use, improved public education, vigorous enforcement of laws, and improved emergency response and trauma treatment, there is more work to do in pursuit of FDOT's long-term vision of zero deaths on Florida's roadways.

2015 PERFORMANCE HIGHLIGHTS

The safety and security performance highlights are:

- The five-year rolling average for traffic fatalities dropped for the seventh consecutive year from 2,448 in 2013 to 2,434 in 2014.
- The five-year rolling average for serious injuries dropped for the tenth consecutive year from 20,413 in 2013 to 20,035 in 2014.
- The annual targets, to reduce fatalities and serious injuries by 5 percent, were not achieved – the five-year rolling average for fatalities decreased by 0.6 percent and for serious injuries by 1.9 percent—continued progress, but not at the rate desired.
- The fatality rate, the measure of fatalities per million vehicle miles traveled, decreased slightly from 1.25 to 1.24.
- Safety belt usage continued to climb, improving to 89.4 percent statewide - which is more than two points higher than the national average.
- The rolling averages for fatalities involving vulnerable road users in 2014 increased over prior years – pedestrian fatalities increased from 490 to 517; motorcyclist fatalities increased from 412 to 444; and bicyclist fatalities increased from 109 to 117.
- Transit safety was similar to previous years - the number of revenue miles between safety incidents dropped to approximately 142,000 miles in 2014.

Performance Profiles are included to highlight specific strategies and programs that support these performance measures.

Florida Strategic Highway Safety Plan

Florida is determined to drive down fatalities and injuries on our streets and highways.

The Florida departments of Education, Health, Highway Safety and Motor Vehicles, Transportation and the Florida Highway Patrol have partnered with agencies of the federal government and dozens of traffic safety organizations and private sector businesses to develop Florida's Strategic Highway Safety Plan.

FATALITIES & SERIOUS INJURIES

CORE MEASURE

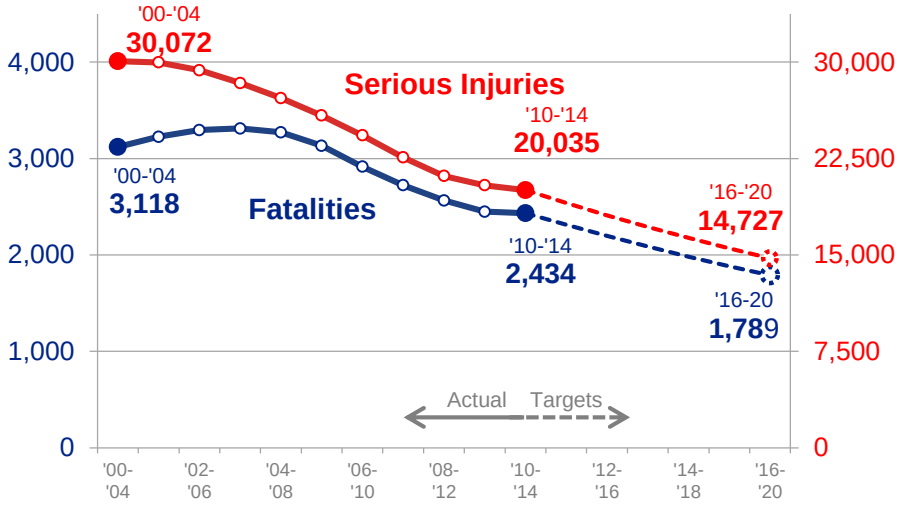
FDOT has identified a series of core measures that relate directly to a primary goal or function and/or support a key strategic initiative. FDOT's core measures for transportation safety are those related to the most severe consequences – fatalities and serious injuries.

It is common to measure fatalities and serious injuries in rolling multi-year averages instead of annual counts. This normalizes the effects of the random fluctuations that are common in traffic crash data and makes real and meaningful trends more apparent. Due to recent changes in the crash reporting form, some of the measures are not traceable back five years and are therefore measured in smaller increments.

FDOT's annual targets are to reduce the five-year rolling average number of fatalities and serious injuries on all Florida roads by 5 percent each year. These are "stretch" targets that may be difficult to achieve every year, reflecting a philosophy of making continuous improvement and a recognition that one life lost is one too many. **Figure 1** shows that the five-year rolling average for fatalities has dropped since 2007 from 3,311 to 2,434, a more than 26 percent reduction. Over the same time period, the five-year rolling average for serious injuries has decreased over 29 percent, from 28,371 to 20,035.

Since 2007, the five-year rolling averages for fatalities and serious injuries have dropped substantially by 26 percent and 29 percent, respectively.

Figure 1: Fatalities and Serious Injuries
(5-Year rolling averages)

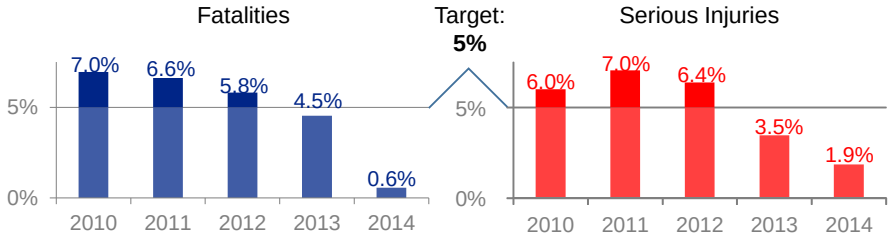


SOURCE: Florida Department of Transportation, State Safety Office

In 2014, 580, or just under one quarter of all fatalities, and 4,012, or nearly one fifth of serious injuries, occurred on Florida's Strategic Intermodal System (SIS) which includes most of the higher speed and higher traffic volume highways.

Figure 2 shows that FDOT fell short of its 5 percent annual reduction targets in 2014 – the five-year rolling average of 2,434 fatalities were 108 higher than the target, and the five-year rolling average of 20,035 serious injuries were 1,020 higher than the target. Assuming the targets are achieved in the future, the five-year rolling averages would drop to approximately 1,789 fatalities and 14,727 serious injuries by 2020.

Figure 2: Annual Reduction in 5-Year Rolling Averages of Fatalities and Serious Injuries (Target: 5%)



SOURCE: Florida Department of Transportation, State Safety Office

KEY STRATEGIES TO REDUCE FATALITIES AND SERIOUS INJURIES

The downward trend in fatalities and serious injuries is attributed, in part, to several safety programs and initiatives, many of which are from the SHSP. FDOT will help ensure continued progress to improve its core measures associated with reducing fatalities and serious injuries through strategies such as those identified below in the five emphasis areas in the SHSP:

- Identify engineering initiatives to improve safety of the built environment.
- Increase training opportunities and educational awareness of good transportation safety practices.
- Support campaigns and education initiatives targeted to discourage DUI.
- Improve enforcement of driving, bicycling and walking behaviors that can improve safety.
- Improve the ability of emergency responders to reduce the severity of traffic crashes.

Medians Save Lives

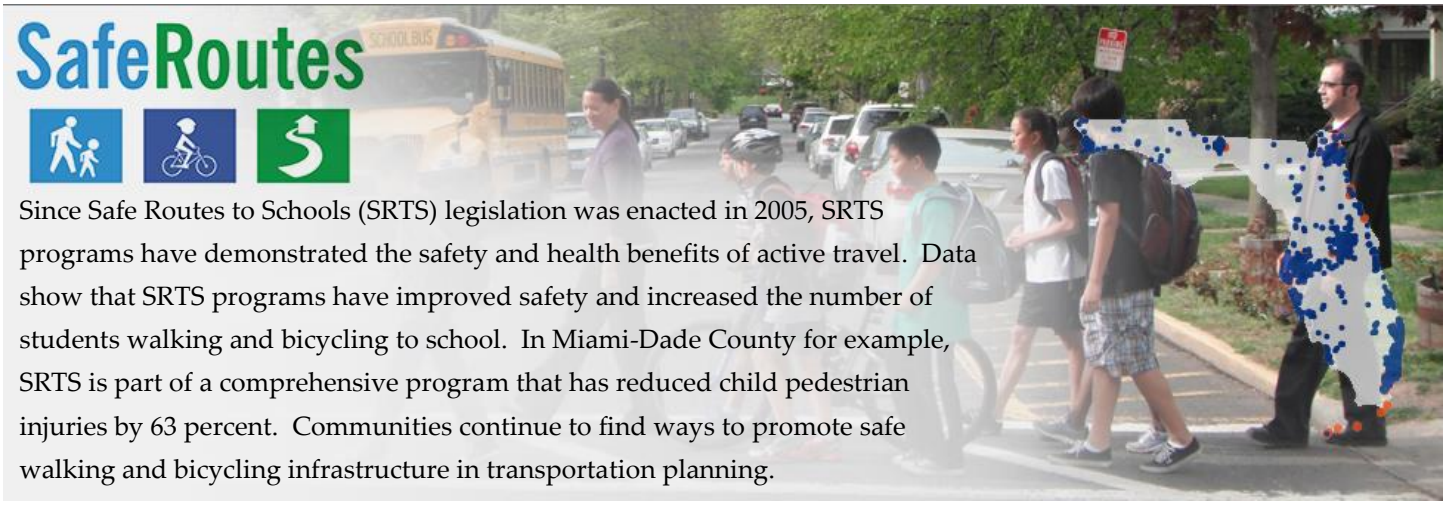
FDOT continues to pursue its policy of retrofitting multi-lane streets with two-way-center turn-lanes to raised medians. This has proven to be effective in reducing serious injuries on urban streets. Florida is one of a few states that have instituted this as a general policy. This policy has been in place since 1992. A recent study of 18 retrofitted corridors showed a decrease in fatal and injury crashes of over 36 percent.

SUPPORTING MEASURES AND INFORMATION

In addition to the core measures, FDOT has identified several supporting measures and other indicators of progress that provide further detail and context about the performance of Florida's transportation system. For safety and security, the supporting measures are:

- Fatality Rate
- Fatalities involving:
  - Lane Departures
  - Intersections
  - Construction Work Zones
  - Impaired Driving
  - Aggressive Driving
  - Distracted Driving
  - Drivers 65 and Over
  - Teen Drivers
  - Pedestrians
  - Bicyclists
  - Motorcyclists
  - Rail Crossings
  - Public Transit
  - Aviation
- Seat Belt Usage
- Commercial Vehicle Crash Rate
- Railroad Derailments
- Transit Miles Between Safety Incidents

As previously noted, due to changes in the crash reporting form, some of the historic data is not available to calculate five-year rolling averages. In some cases, three-year rolling averages are used, or annual numbers are reported when the five year trend data is not available. For the future, it is expected that all of these measures will eventually become five-year rolling averages.

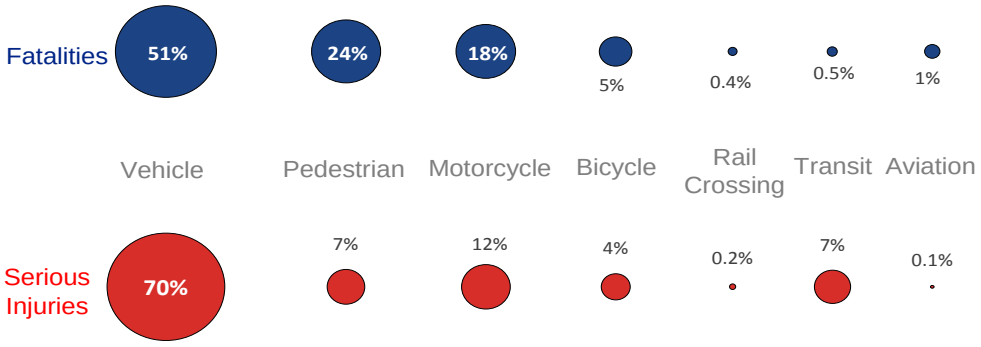


Since Safe Routes to Schools (SRTS) legislation was enacted in 2005, SRTS programs have demonstrated the safety and health benefits of active travel. Data show that SRTS programs have improved safety and increased the number of students walking and bicycling to school. In Miami-Dade County for example, SRTS is part of a comprehensive program that has reduced child pedestrian injuries by 63 percent. Communities continue to find ways to promote safe walking and bicycling infrastructure in transportation planning.

Fatalities and Injuries by Mode

Most 2014 fatalities and serious injuries on Florida's transportation system occurred where the majority of travel occurs: on roadways and in personal vehicles. **Figure 3** shows that fatalities and serious injuries involving pedestrians and motorcycles were also prevalent as compared to other modes of transportation.

Figure 3: Florida Transportation Fatalities and Injuries by Mode, 2014



SOURCE: Florida Department of Transportation, State Safety Office

Fatality Rate

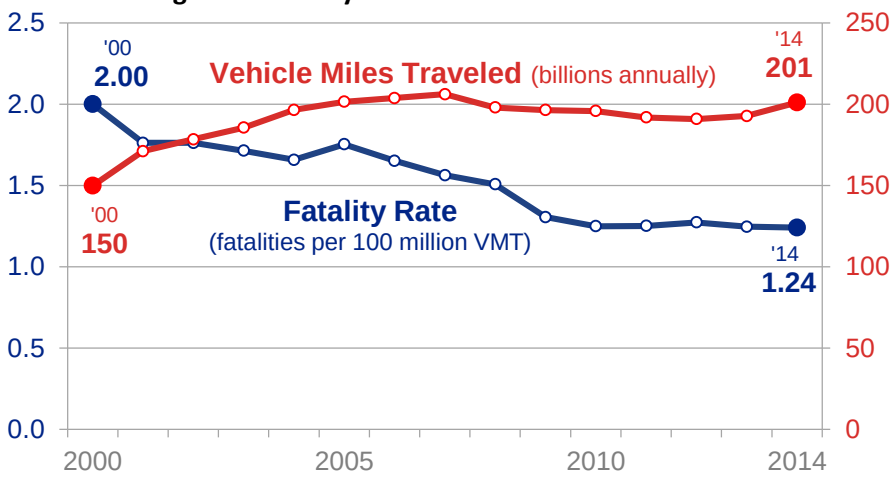
SUPPORTING MEASURE

The Fatality Rate – the number of fatalities per 100 million VMT – has remained fairly flat over the last five years after decreasing sharply during the previous five year period.

To help account for the relationship between fatalities and miles driven, highway safety experts use a "fatality rate" by calculating the number of fatalities per 100 million vehicle miles traveled (VMT). The resultant fatality rate includes motor vehicle and motorcyclist fatalities as well as bicyclist and pedestrian fatalities involving motor vehicles.

Figure 4 shows that Florida's highway fatality rate per 100 million VMT dropped to 1.24 in 2014 and remains far below the fatality rates of the early 2000s.

Figure 4: Fatality Rate vs. Vehicle Miles Traveled



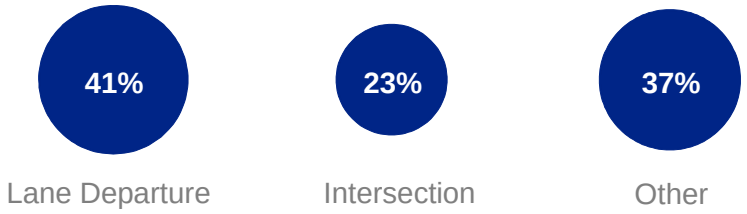
SOURCE: Florida Department of Transportation, State Safety Office; FDOT General Interest Highway Statistics Source Book; and the Florida Department of Highway Safety and Motor Vehicles, Traffic Crash Facts Annual Report

Fatalities Involving Lane Departures and Intersections

SUPPORTING MEASURES

The majority of roadway crashes occur either at intersections or by vehicles departing their lane, as shown in **Figure 5**. These crash types are of particular interest because FDOT strives to ensure that the design, construction, maintenance, and operation of facilities on the State Highway System meet safety standards.

Figure 5: Florida Fatalities by Crash Type, 2014



SOURCE: Florida Department of Transportation, State Safety Office

41 percent of all fatalities on Florida roadways involve a lane departure.

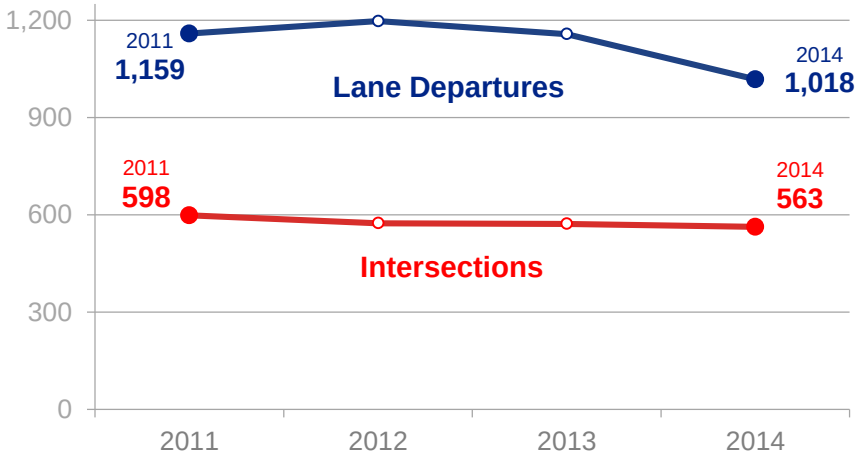
Approximately 41 percent of all traffic fatalities in 2014 involved lane departures. Lane departures include running off the road, crossing the center median into oncoming traffic, and sideswipe crashes. Lane departure crashes may also involve a vehicular rollover or hitting a fixed object such as a utility pole.

Traffic fatalities at intersections comprised 23 percent of statewide traffic fatalities in 2014. Identified as an emphasis area in the 2006 and 2012 Strategic Highway Safety Plans (SHSP), Florida improved intersection design and operation standards by implementing the 2006 Intersection Safety Implementation Plan.

Figure 6 shows that 1,018 lane departure fatalities and 563 intersection fatalities occurred in 2014, both exhibiting overall declines since 2011.

Figure 6: Lane Departure and Intersection Fatalities

Lane departure and intersection fatalities have declined over the past few years.



SOURCE: Florida Department of Transportation, State Safety Office

Efforts must be made to keep vehicles from leaving the road or crossing the center median to reduce the likelihood of vehicles overturning or crashing into roadside objects or other vehicles. The number and severity of lane departure crashes may be reduced by installing guardrail or cable barrier, dividing highways, adding paved shoulders, using break-away sign posts, placing crash cushions at the end of roadside obstacles, highlighting the edge of pavement on rural highways, improving roadway curve design, and improving roadway lighting at intersections. Safe driving behaviors also warrants continued emphasis.

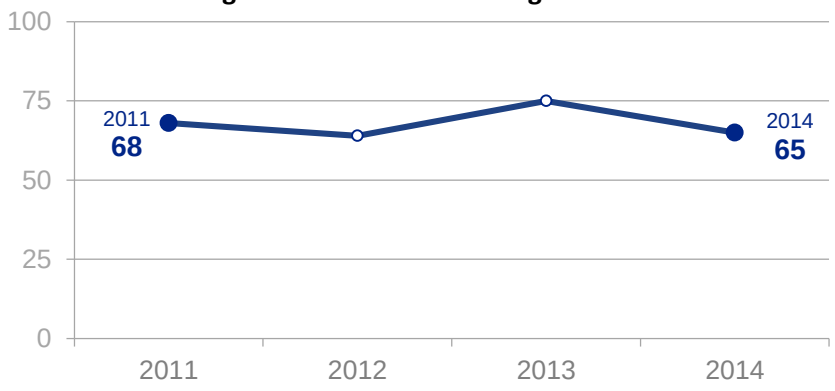
Fatalities in Construction Work Zones

SUPPORTING MEASURE

The safe and efficient flow of traffic through work zones is an ongoing FDOT priority. Reducing work zone crashes not only decreases the number of fatalities and injuries of road users, it also improves safety for FDOT employees and private contractors working in construction zones. While **Figure 7** shows that fatalities in work zones have been fairly constant over the past four years, they did decrease markedly from 75 in 2013 down to 65 in 2014.

Fatalities in work zones decreased over 13 percent between 2013 and 2014.

Figure 7: Fatalities Involving Work Zones



SOURCE: Florida Department of Transportation, State Safety Office

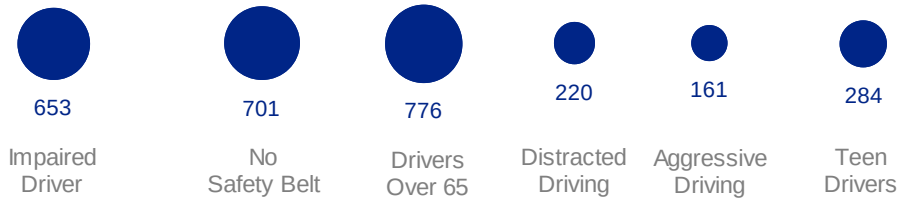
EXPECTTHEUNEXPECTED

FDOT's Work Zone Safety campaign continues its message that everyone needs to recognize the dangers of reckless driving through highway work zones. National Work Zone Awareness Week is an annual spring campaign held to encourage safe driving through highway work zones and construction sites. The key message is for drivers to use extra caution in work zones. The theme for National Work Zone Awareness Week 2015 was "Expect the Unexpected."

Demographic and Behavioral Factors

Despite FDOT's efforts to ensure that roadways meet or exceed safety standards, many crashes still occur due to driver related behaviors, choices, and skills. **Figure 8** shows 2014 fatalities by various demographic and behavioral factors. Some of the fatalities shown below may involve more than one factor. Any and all factors associated in any single fatality are counted. As such, the sum of these numbers would be greater than the total number of fatalities.

Figure 8: Fatalities Involving Demographic and Behavioral Factors, 2014



SOURCE: Florida Department of Transportation, State Safety Office
NOTE: These numbers include the driver and other involved persons

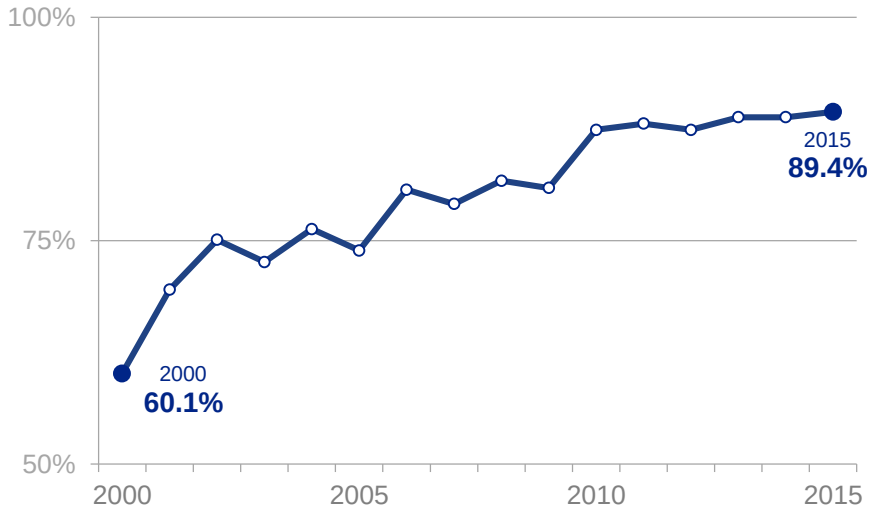
Seat Belt Usage

SUPPORTING MEASURE

Wearing a safety belt is the most important preventative measure that drivers can take for crash protection. **Figure 9** shows that Florida motorists are increasingly wearing safety belts. The increase is due in part to the passage of a primary enforcement law in 2009 – the usage rate jumped from 81 percent to 87 percent the following year. In 2014 the statewide safety belt usage rate was 89.4 percent, which is higher than the national average of 87 percent.

Florida's statewide safety belt usage rate of 89.4 percent is more than two points higher than the national average.

Figure 9: Statewide Seat Belt Usage Rate



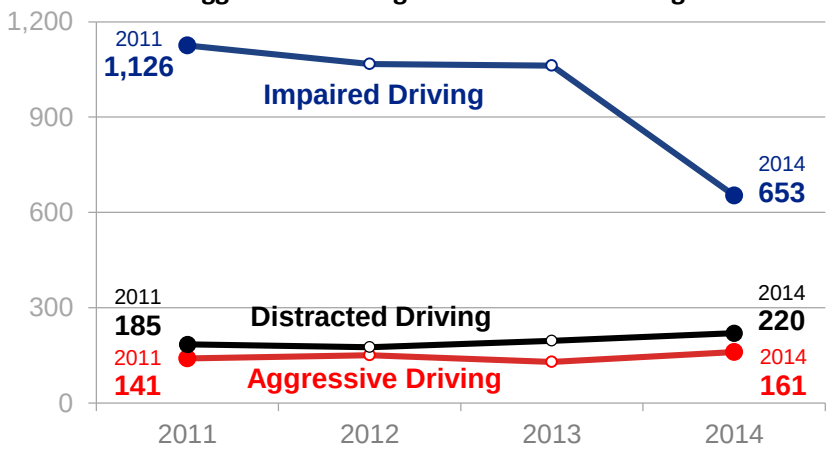
SOURCE: Florida Department of Transportation, State Safety Office

Fatalities Involving Impaired Drivers, Aggressive and Distracted Driving

SUPPORTING MEASURES

Impaired, aggressive, or distracted driving often contributes to the frequency and severity of traffic crashes. **Figure 10** shows the number of fatalities involving impaired, aggressive, and distracted drivers. Due to a change to the crash reporting form in 2011, historical comparisons prior to 2011 are difficult to evaluate.

Figure 10: Fatalities Involving Impaired Drivers, Aggressive Driving and Distracted Driving



SOURCE: Florida Department of Transportation, State Safety Office

Impaired driving continues to be a leading contributing factor for traffic fatalities. In 2014, 653 alcohol-related and drug traffic fatalities occurred, which is a significant decrease over prior years.

Aggressive driving, as defined by state statute, requires inclusion of at least two of the following contributing causes: speeding, unsafe or improper lane change, following too closely, failure to yield the right-of-way, improper passing, and failure to obey traffic control devices. Aggressive driving is not presently an enforceable offense in Florida. In 2014, 161 fatalities were related to aggressive driving, which is an increase over prior years.

The revised 2011 crash reporting form improved the manner in which incidents can be measured.

Distracted driving occurs when a driver allows a mental or physical activity to shift his or her focus from the task of driving. Fatalities involving distracted driving have increased by about 19 percent from 185 in 2011 to 220 in 2014. There are three main types of distraction: manual (taking hands off the wheel), visual (taking eyes off the road), and cognitive (taking one's mind off driving). Not only are drivers distracted because of activities such as adjusting the radio, eating, reading, and grooming; new technologies have introduced global positioning system (GPS) navigation, direction way-finding, telephone use, mobile web surfing, and texting as additional driver distractions.

Additionally, passengers can be especially distracting to young inexperienced drivers.

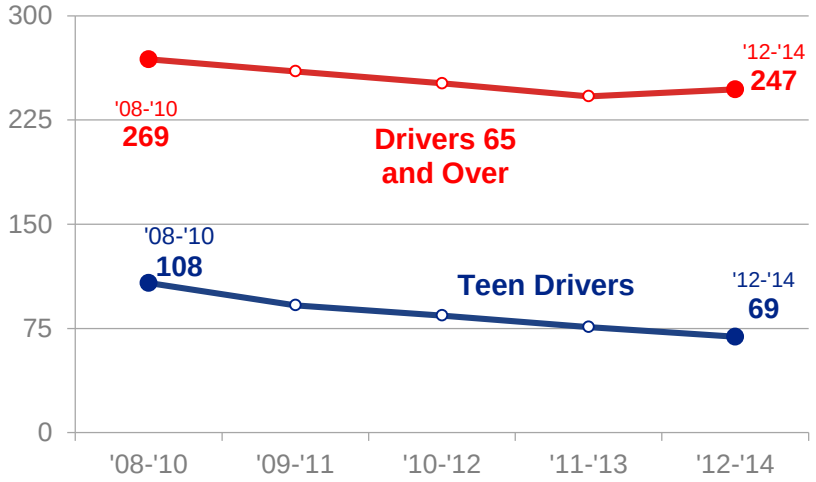
Fatalities Involving At-Risk Drivers

SUPPORTING MEASURE

Fatalities involving teen drivers and drivers over 65 have declined in recent years.

Historically, fatalities involving drivers 65 and over and teen drivers (ages 15 to 19) typically account for around one quarter of all Florida traffic fatalities. **Figure 11** shows that fatalities involving at-risk drivers have declined in recent years. In 2014, fatalities involving at-risk drivers accounted for about 13 percent of all fatalities.

Figure 11: Fatalities Involving At-Risk Drivers
(3-year rolling averages)



SOURCE: Florida Department of Transportation, State Safety Office
NOTE: The data presented above only includes the teen and over 65 drivers. It does not include other people that died as a result of the crashes.

Today's older drivers are driving longer and are driving more miles per year. This trend is especially important considering that Florida currently leads the nation with 18 percent of its population 65 years of age and older. According to the Florida Office of Economic and Demographic Research, by 2030, over 24 percent of Floridians will be over 65, and more than half of them will be over 75, making this a particularly pressing safety issue.

The other end of the age spectrum involves the least experienced drivers—ages 15 to 19. Motor vehicle crashes are the number one killer of teens, with more teens dying in crashes than the next three leading causes of death (homicide, suicide, and disease) combined. Motor vehicle crashes involving teen drivers kill an average of 11 teens per day in the United States.

Fatalities Involving Vulnerable Road Users

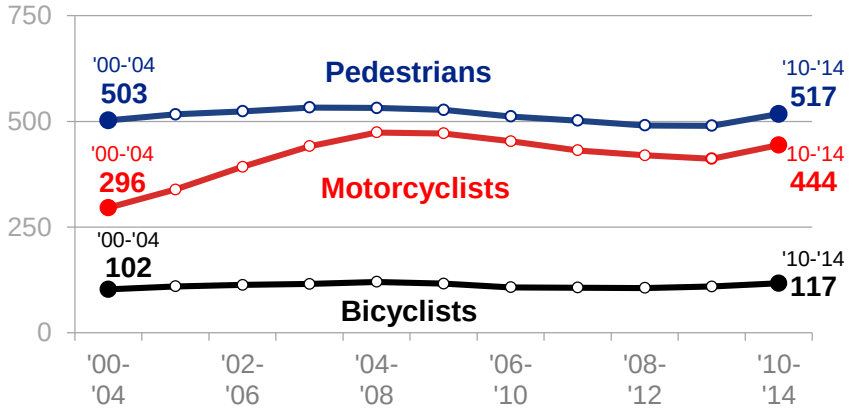
SUPPORTING MEASURES

Vulnerable road users, by definition, are pedestrians, bicyclists, and motorcyclists. **Figure 12** shows that vulnerable road user fatalities are increasing. Florida's climate, conducive to year-round walking, bicycling and motorcycling, is a factor in the relatively high fatality rates among these road user groups.

FDOT has elevated pedestrian and bicycle safety to a department initiative. It has a state bicycle/pedestrian safety program manager and all FDOT Districts have bicycle/pedestrian coordinators.

Vulnerable road user groups have not experienced the recent decreases in fatalities that have been common in other modes—fatalities are increasing.

Figure 12: Fatalities Involving Vulnerable Road Users
(5-year rolling averages)



SOURCE: Florida Department of Transportation, State Safety Office

Bicycle-Pedestrian Safety Efforts

In 2012, Florida's ranking among states for pedestrian deaths per capita fell out of the top three for the first time in decades. FDOT District One Secretary Billy Hattaway is a big believer in the Three E's of Safety: engineering, enforcement, and education. In addition to helping develop the first-ever statewide pedestrian and bicycle strategic safety plan, which includes a significant investment in outreach and stepped up law enforcement, he has also led efforts to train planners and engineers.

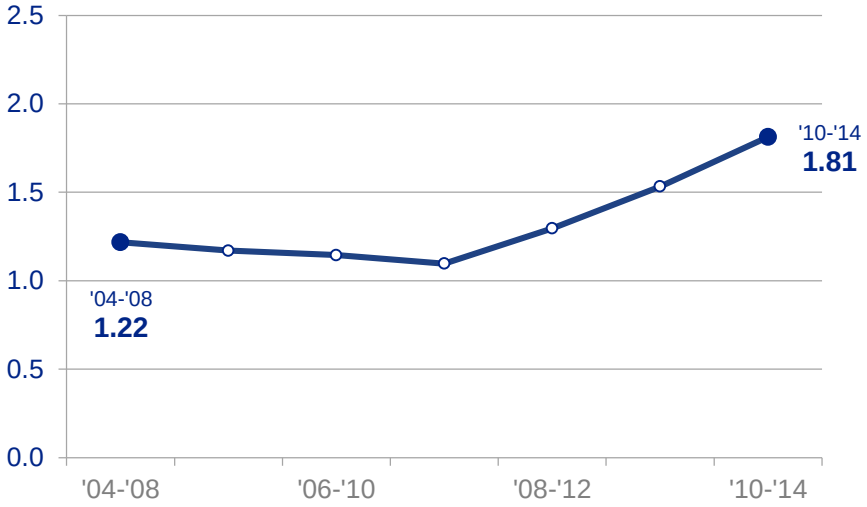
Commercial Vehicle Crash Rate

SUPPORTING MEASURE

Our population growth brings new challenges for freight traffic. FDOT strives to improve commercial motor vehicle safety by coordinating with the Florida Highway Patrol's (FHP) Commercial Vehicle Enforcement (CVE) Office to conduct safety inspections and enforcement of safety requirements. Changes to Florida Statute 316.066 in 2012 require that all crashes involving a commercial motor vehicle be reported to the Florida Department of Highway Safety and Motor Vehicles (DHSMV). This change caused a corresponding increase in the number of reported commercial motor vehicle crashes, thereby leading to an increase in the commercial vehicle crash rate. **Figure 13** illustrates the commercial vehicle crash rate since 2004.

Figure 13: Commercial Vehicle Crash Rate

(Crashes per million vehicle-miles of truck travel: 5-year rolling averages)



SOURCE: Florida Highway Safety and Motor Vehicles; Traffic Crash Facts Annual Report, FDOT Multimodal Mobility Performance Measures Source Book

Rail Crossing Fatalities and Railroad Derailments

SUPPORTING MEASURES

Approximately 80 percent of Florida's public at-grade rail crossings are equipped with active warning devices compared to approximately 50 percent nationally.

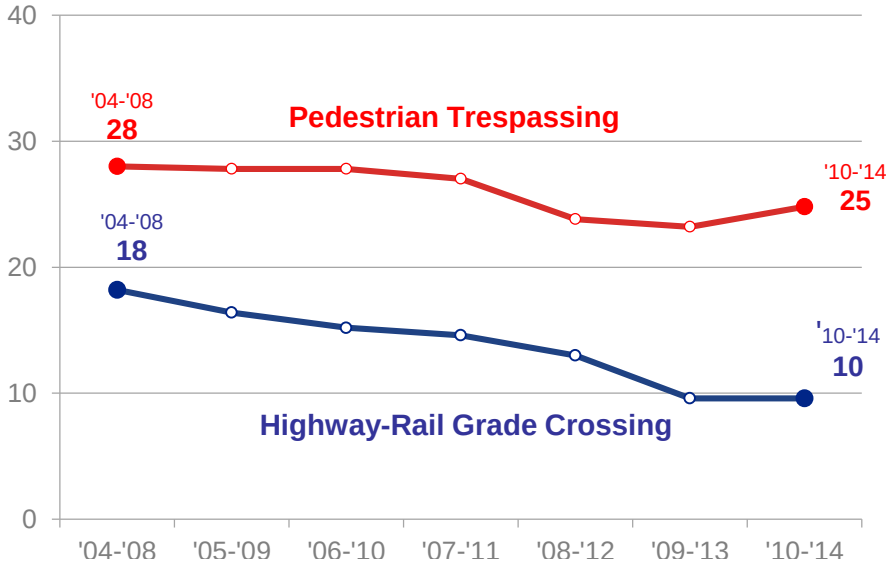
As of January 2014, Florida has 3,784 public at-grade rail crossings with approximately 80 percent equipped with active warning devices compared to approximately 50 percent nationally. Both crashes and fatalities at rail crossings have declined in recent decades. This is especially noteworthy given increased highway traffic and operational changes that have resulted in more trains on fewer rail lines.

Pedestrian trespassing on railroad tracks is a problem that FDOT is working to curb. This includes installing no trespassing signs, installing and repairing fencing, and working with local police departments to issue warnings and citations.

Figure 14 shows the five-year rolling average of fatalities since 2004 at highway-rail grade rail crossings and those involving pedestrians.

Rail crossing fatalities have been decreasing over the past decade.

Figure 14: Rail Crossing Fatalities -Highway-Rail Grade Crossings & Pedestrian Trespassing (5-year rolling averages)

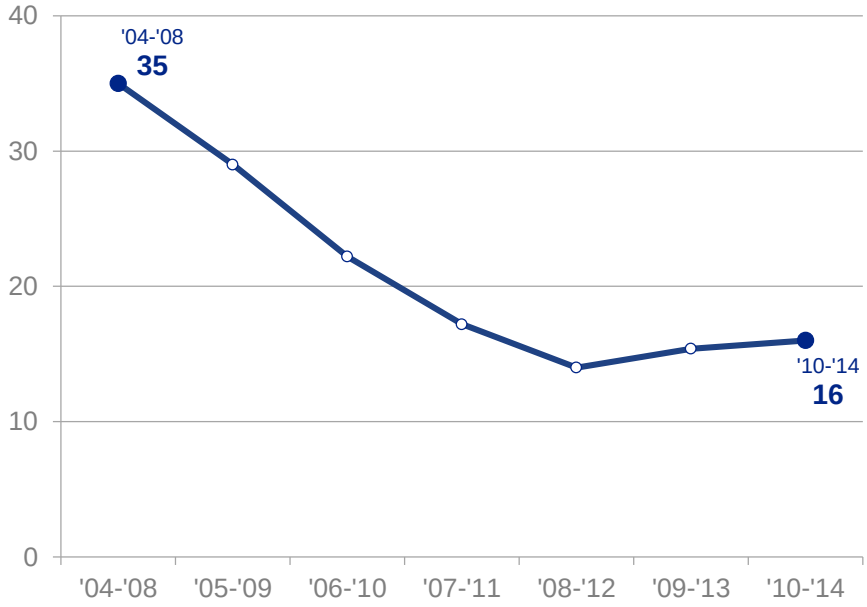


SOURCE: Federal Railroad Administration, Office of Safety Analysis

In 1977, the year before FDOT began its railroad safety inspection program, there were 259 train derailments. **Figure 15** shows that derailments have increased in recent years but are still far below pre-1977 levels. The 2010-2014 five-year rolling average is 16 derailments. Most derailments occur on tracks within industrial yards and result in little damage. FDOT performs annual safety inspections on over 5,000 miles of track, 3,000 turnouts, 14,000 freight cars, and 500 locomotives, observing in excess of 1,000 rail operating practices in the process. These inspections and practices supplement and support the safety operations conducted by privately owned railroad companies.

Railroad derailments have risen slightly in recent years. Most derailments occur within industrial yards and result in little damage.

Figure 15: Railroad Derailments (5-year rolling averages)



SOURCE: Federal Railroad Administration, Office of Safety Analysis

Florida Operation Lifesaver

Florida Operation Lifesaver is a statewide, non-profit public awareness and education program dedicated to ending tragic collisions, fatalities, and injuries at highway-rail grade crossings and on railroad property. It is working to change people's behavior around railroad tracks and crossings with the national public awareness campaign, "See Tracks? Think Train!"

Fatalities Involving Public Transit and Revenue Miles between Safety Incidents

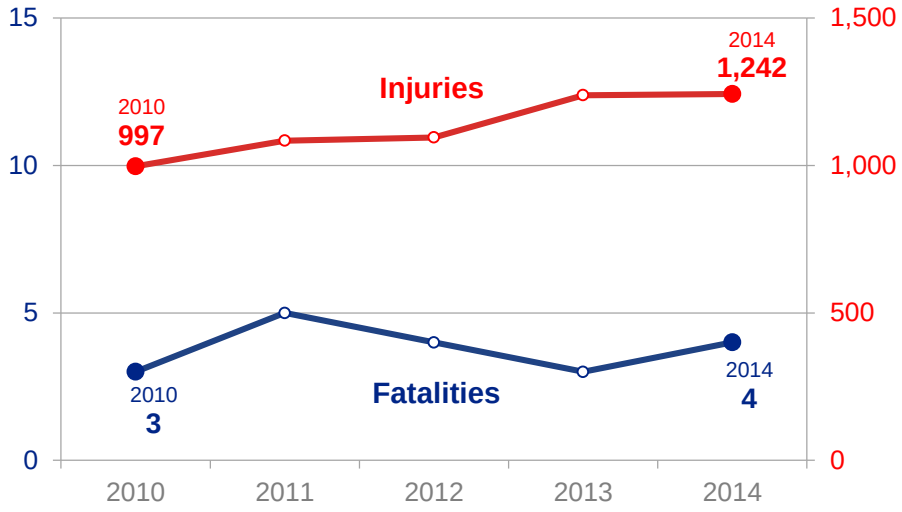
SUPPORTING MEASURES

Most of Florida's public transit systems operate on the roadway system. As such, the performance and safety of the roadway system can affect public transit safety and on-time performance. Similarly, incidents involving public transit vehicles can affect the flow of automobile traffic.

Safety data for public transit are reported to the National Transit Database (NTD). Within the NTD, safety incidents can include both major and minor incidents. Major incidents include fatalities and injuries needing immediate medical attention and minor incidents include slips, trips and falls. **Figure 16** illustrates that between 2010 and 2014, the number of major and minor transit incidents related to injuries increased slightly but fatalities remained close to the same.

Between 2010 and 2014 the number of transit incidents related to injuries increased slightly but fatalities remained close to the same.

Figure 16: Transit Fatalities and Injuries

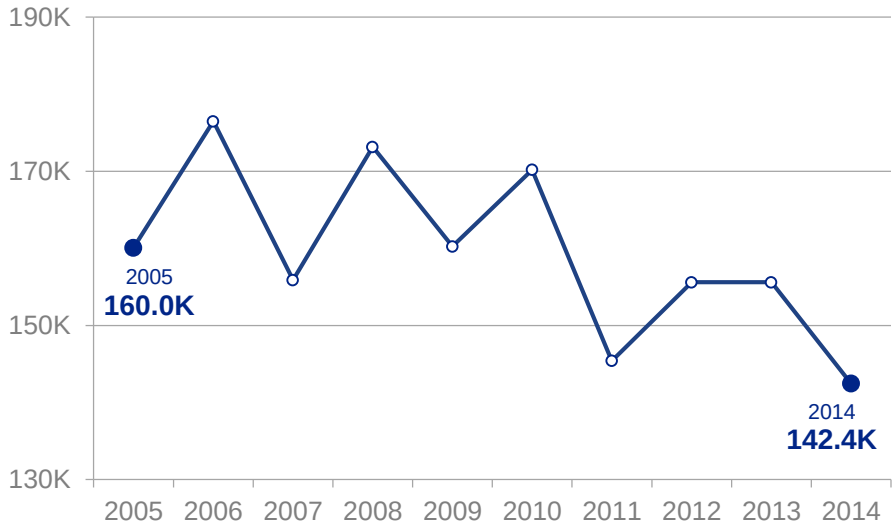


SOURCE: Florida Department of Transportation, Public Transit Office
Data represents Florida's Urban Fixed Route Transit Systems

Figure 17 illustrates revenue miles between safety incidents for public transit. This measure provides insight into the frequency of safety incidents in relation to transit miles traveled. As Florida transit agencies increase the number of service miles, ideally revenue miles between safety incidents will also increase as the frequency of safety incidents decreases. In 2014, the number of revenue miles between safety incidents decreased to 142,425 from 155,633 in 2013, due to a slight increase in reported safety incidents. FDOT's Transit Office provides continuous training and technical assistance to Florida transit agencies to assist in reducing the number of injuries and fatalities in order to provide a safe traveling environment.

In 2014, the number of revenue miles between safety incidents decreased to 142,425 from 155,633 in 2013, due to a slight increase in safety incidents.

Figure 17: Revenue Miles between Safety Incidents (thousands)



SOURCE: Florida Department of Transportation, Public Transit Office
Data represents Florida's Urban Fixed Route Transit Systems

Aviation Fatalities

SUPPORTING MEASURE

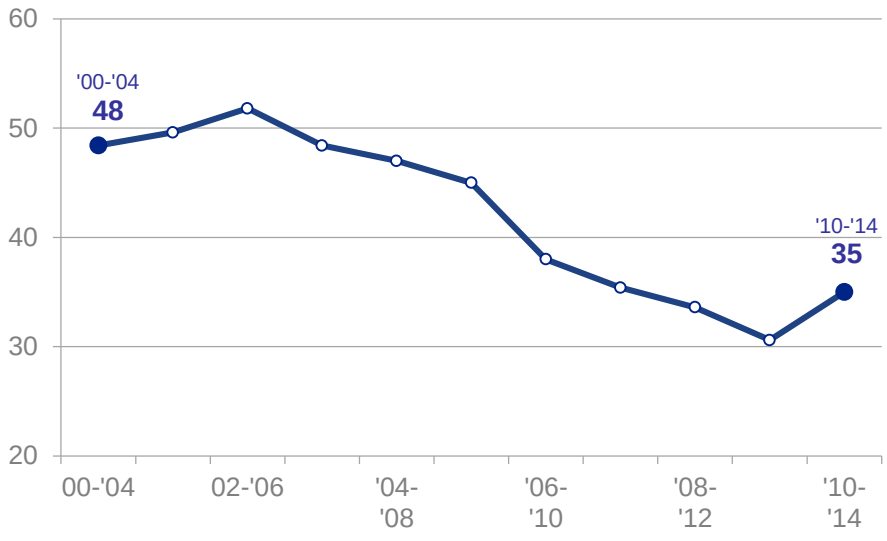
Florida has 20 commercial service airports that served 72.3 million passengers in 2014. Statewide there are 779 public, private and military aviation facilities. More than half (63 percent) are airports and another third (37 percent) are heliports. Florida has 108 general aviation public-use facilities meeting general aviation needs that provide critical service to local communities.

FDOT regulates Florida's public-use aviation facilities through permitting, safety inspection and licensing. All private-use facilities are registered with FDOT.

Between 2004 and 2014, there were 450 general aviation fatalities in Florida, with a high of 64 in 2005 and a low of 26 in 2011. The average number of fatalities per year was 41 between 2004 and 2014. In 2014, 62 fatalities occurred in Florida, which brought the 2010-2014 five-year rolling average up to 35. Overall the five-year rolling average of aviation fatalities has generally been declining. **Figure 18** shows the overall trend in aviation fatalities.

The five-year rolling average of aviation fatalities has generally been declining.

Figure 18: Aviation Fatalities
(5-year rolling averages)



SOURCE: National Transportation Safety Board, Aviation Accident Database & Synopses (includes: airplanes, gliders, balloons, blimps/dirigibles, ultralights, gyroplanes, powered-lifts, powered-parachutes, and weight-shifts)

TRANSPORTATION SECURITY

Security involves comprehensive emergency preparedness efforts and vigilant oversight. Emergency management and transportation security requires collaboration among many entities outside the transportation field and close coordination at many levels.

Emergency management, including preparedness planning, response and recovery activities, is primarily the responsibility of the Florida Division of Emergency Management within the Executive Office of the Governor. The division works as a team with emergency responders and agencies at the federal, state, regional, and local levels as well as private sector and volunteer organizations. By state statute (252.38, F.S.), each county must have an emergency management plan – all 67 Florida counties are currently in compliance. FDOT participates in this process by preparing for and addressing the aftermath of severe storms.

The security of the transportation system also involves organizations typically not associated with FDOT's operation and management. Security system partners include:

- U.S. Department of Homeland Security/Transportation Security Administration (TSA)
- Other designated federal agencies
- Florida Department of Law Enforcement
- Florida Highway Patrol's (FHP) Commercial Vehicle Enforcement (CVE) Office

The FHP/CVE law enforcement activities, such as hazardous vehicle inspections, are a crucial element in domestic security.

Since September 11, 2001, cargo and passenger safety and security have become increasingly important issues to local governments and port authorities that own and operate Florida's seaports. For example, security costs for Florida's 15 deep-water seaports were $12.3 million annually pre-9/11 and grew to $46.8 million by 2005. Seaports develop, design, and deploy enhanced security systems to control and protect both land-side and water-side access to meet state and federal security requirements. Seaports work directly with the Florida Department of Law Enforcement and federal agencies such as the Coast Guard to ensure compliance with these requirements.

FDOT's Aviation and Spaceports Office also supports security planning efforts and operations through several programs. For example, FDOT provides support for the Airport Watch Program, which partners with the Aircraft Owners and Pilots Association and the TSA to coordinate a nationwide program that uses the eyes and ears of approximately 50,000 Florida pilots for observing and reporting suspicious activities. Other activities include FDOT's review of the security plans for all general aviation airports, support of compliance with TSA's rules for commercial service airport security, and administration of security project funding as authorized through revenues generated by "United We Stand" Florida license plate sales.

Security remains a challenging area of performance measurement, but one that deserves continued attention—even from the perspective that transportation performance is multi-dimensional and includes all modes. As FDOT and others promote public transportation, for example, recognition of the importance of security for transit users is essential. Further, perceptions regarding transit security can be a challenge in promoting its use—even when perceptions and reality do not align. Transportation agencies, communities, law enforcement officials and others will continue to need to partner to ensure secure transit stations and stops, particularly in areas with crime or other issues.

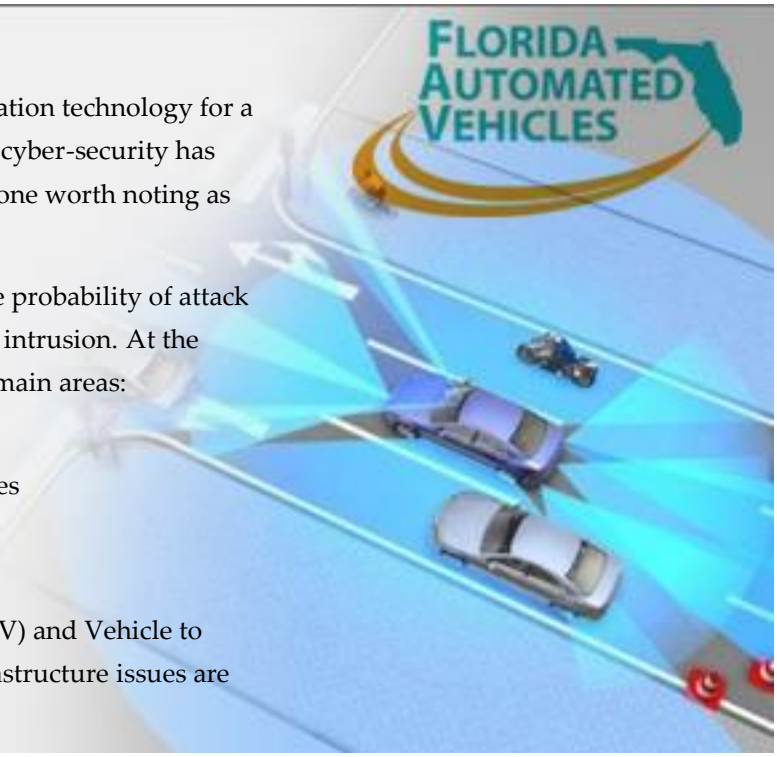
Cybersecurity for Automobiles

As vehicles have become increasingly reliant on information technology for a wide range of components and operating performance, cyber-security has become a concern. While this is a fairly new issue, it is one worth noting as vehicles become increasingly computerized.

A layered approach to vehicle cybersecurity reduces the probability of attack and mitigates the potential ramifications of a successful intrusion. At the vehicle level this approach includes the following four main areas:

- Protective/preventive measures and techniques
- Real-time intrusion (hacking) detection measures
- Real-time response methods
- Assessment of solutions

In addition, legal improvements, Vehicle to Vehicle (V2V) and Vehicle to Infrastructure (V2I) Communications and Security Infrastructure issues are being considered.



FOR THE FUTURE

FDOT strives to be forward thinking in regards to performance measurement. Many measures can be valuably used year after year. But DOTs and the states they serve continue to both lead change and adapt to change. This year we are introducing a section in each performance chapter that identifies potential measurement considerations for the future.

Multimodal Safety

With continued and enhanced focus on multi-modal mobility across the state, there will be opportunities to address safety performance for all modes, building on our experience and depth of data for highways. Fatalities and serious injuries, for example, are critically important measures regardless of mode. This will also support a greater collaboration around safety across the various transportation modes.

Education and Enforcement

FDOT places a strong emphasis on all facets of safety including education and enforcement. Looking ahead we want to find ways to meaningfully report on the performance of our diverse education and enforcement efforts.

Bicycle and Pedestrian/Complete Streets/ Transit Oriented Development

With Florida's growing priority for bicycle and pedestrian transportation we will continue to look for ways to make our performance measures more complete. For example, with better information on the number of bicyclists and pedestrians and the trips they make, we would be better able to gauge exposure to possible accidents. Complete Streets have an important safety dimension that favorably impacts safety performance and could be a future measurement focus area (e.g., comparative crash rates for streets with and without Complete Streets elements). In addition, safe walkability is a key attribute for successful transit oriented development around transit stations.

Roundabouts

Florida has few roundabouts, but they have been very effective here and elsewhere in terms of the reduction and severity of accidents. In the short term it may be useful to compare the number and severity of crashes at roundabouts, signalized intersections, and non-signalized intersections with similar traffic volumes.

FOR THE FUTURE

Technology and Visualization

Advances in safety data and mapping software should afford the opportunity to more visually present safety performance data. As transportation and information technology continues to advance and blend together, security aspects will be as important for information systems as it is for transportation facilities.

Project Development

FDOT and other transportation operators increasingly incorporate safety into the design of transportation facilities. The effectiveness and extent of safety integration with project development might be an area for future measurement and reporting.

Florida Department of Transportation 2015 Performance Report

Preservation

Maintenance and Operations

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PRESERVATION

This report is part of the Performance-Based Planning and Programming Process used by the Florida Department of Transportation (FDOT). For a description of that process, updates to this report and other transportation performance reporting initiatives of FDOT, go to FDOTPerforms.org.

INTRODUCTION

Florida has invested billions of dollars in roads, bridges, rail networks, airports, public transit, seaports and other elements of the transportation system. Regular maintenance and improvements keep these assets operating efficiently, thereby extending their useful life and delaying the substantial cost of reconstruction or replacement.

Regular maintenance improvements keep assets operating efficiently, extending their useful life and delaying the substantial cost of reconstruction or replacement.

The Florida Department of Transportation (FDOT) continues to make substantial investments to meet established standards for highway pavement, bridges and routine maintenance to keep the portion of the transportation system it owns in acceptable condition. Roadways owned by local governments and other transportation facilities such as transit systems, airports, seaports, railroads, trails, and spaceports are maintained by their respective public or private owners and operators. FDOT helps fund some of these facilities, but does not directly build, operate or maintain them.

Managing the transportation system also means ensuring that the system efficiently carries people and goods to meet the demands of population growth, an expanding economy, and changing travel behavior. FDOT is expanding the use of Intelligent Transportation Systems, transportation demand management, access management, incident management and other techniques to maximize the operational efficiency and safety of the system.

FDOT has primary jurisdiction over the State Highway System (SHS). Although this system consists of only 12,116 (9.9 percent) of the 122,392 public road centerline miles in Florida, it carries over half (53.8 percent) of all traffic. For the SHS, FDOT resurfaces roads, repairs or replaces bridges and conducts routine maintenance activities such as mowing, litter removal, guardrail repair, and sign replacement. There is a compelling case that the maintenance of existing transportation infrastructure is the most effective investment strategy from a benefit-cost perspective.

2015 PERFORMANCE HIGHLIGHTS

The effective and efficient preservation (maintenance and operation) of Florida's state roads and bridges and other modes protects the state's substantial infrastructure investment and helps to ensure the performance of the transportation system. Key performance highlights are:

- State Highway System (SHS) pavement is in excellent condition, with more than 92 percent exceeding FDOT standards.
- FDOT maintained bridges are also in excellent condition, with nearly 95 percent exceeding FDOT standards.
- FDOT has met or exceeded its roadway maintenance standard every year since 1994—more than a generation of maintenance excellence.
- Over the past decade, Florida transit agencies have kept bus and passenger train breakdowns to around one per 4,000 revenue miles—fewer breakdowns means better transit service and performance.
- The number of miles managed by Intelligent Transportation System (ITS) technologies has increased almost eight-fold from 170 miles in 2005 to nearly 1,300 miles in 2014.
- Over 24 million messages, calls, web hits, app sessions, tweets, and alerts were made through Florida's 511 program in 2014.
- Road Ranger services were provided to over 382,000 stranded motorists in 2014.
- FDOT consistently achieves its 90-minute target for clearing roadways after incidents (46.5 minute average for the SHS and 70 minute average for severe incidents handled by local Incident Response Teams).

Performance Profiles are included to highlight specific strategies and programs that support these performance measures.

Asset Management

FDOT is committed to maintaining the existing system before it invests in new capacity. FDOT's Transportation Asset Management Plan objectives are to: achieve and maintain a state of good repair for transportation assets, reduce vulnerability and increase resiliency of critical infrastructure to the impacts of extreme weather and other environmental conditions, and minimize damage to infrastructure from vehicles.

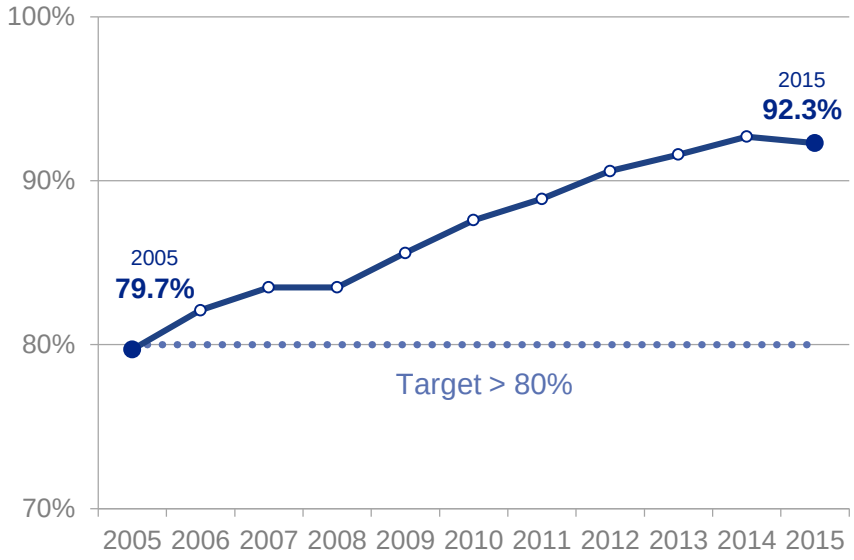
PAVEMENT CONDITION

CORE MEASURE

State Highway System pavement is in excellent condition, with more than 92 percent currently meeting FDOT standards.

FDOT has identified a series of core measures related to the preservation (maintenance and operation) of the transportation system, which is a primary department goal. **Figure 1** shows that SHS pavement is in excellent condition, with 92.3 percent currently meeting FDOT standards. This percentage is expected to remain above the 80 percent target threshold, as it has throughout the past decade.

Figure 1: Percent Pavement on the State Highway System Meeting Department Standards



SOURCE: Florida Department of Transportation, Office of Maintenance

The 7.7 percent of the SHS's 43,593 lane miles not meeting the target equates to an estimated 3,357 pavement lane-miles needing rehabilitation. FDOT continues to assess and prioritize funding to meet pavement condition objectives and reevaluates its needs annually.

Resurfacing needs are identified through FDOT's annual pavement condition survey. This survey evaluates pavement conditions using three factors: ride quality, crack severity, and average depth of wheel-path ruts.

"Ride quality" is what the motorist experiences (i.e., smoothness of the ride). Crack severity, or "cracking," refers to the deterioration of the pavement, which leads to loss of smoothness and, ultimately, deterioration of the road base by water seepage, if not corrected. Wheel-path ruts, or "rutting," are pavement depressions caused mainly by heavy use. These depressions or ruts can collect water, creating a safety hazard.

Truck traffic contributes to substantial wear on roadways, because of the force exerted on the pavement and the way pavement reacts. A five-axle, 80,000 pound semi-trailer truck causes pavement distress equivalent to that caused by an estimated 9,600 cars. FDOT establishes legal weight limits, while FDOT's Motor Carrier Size and Weight Office and the Florida Highway Patrol's Office of Commercial Vehicle Enforcement enforce them. When vehicles exceed the allowable weight limit, adverse impacts to pavement longevity can be significantly increased.

KEY STRATEGIES TO IMPROVE PAVEMENT CONDITION

FDOT will help ensure continued progress to improve its core measure of pavement condition through strategies such as those listed below:

- Balance the programming of resurfacing projects in relation to needs and optimize the timing of projects through a robust pavement management system.
- Coordinate with FDOT's Motor Carrier Size and Weight Office and the Florida Highway Patrol's Office of Commercial Vehicle Enforcement to minimize the illegal operation of commercial motor vehicles exceeding weight limits on Florida's public roads and bridges.
- Facilitate training and technical assistance, and maintain current data systems to assist local governments in conducting pavement condition surveys and ratings.
- Continue to identify and implement practices which reduce the time and cost of preserving the SHS.
- Collaborate with freight shippers and carriers to promote effective and efficient goods movement.

Pavement Performance Data

FDOT's Pavement Condition Unit conducts annual surveys of the entire State Highway System as part of its Pavement Management Program. The data covers cracking, ride quality, and rut measurements and is used to assess the condition and performance of the state's roadways, as well as to predict future rehabilitation needs. This information helps FDOT assess its resurfacing needs throughout the state.

SUPPORTING MEASURES AND INFORMATION

In addition to its core pavement condition measure, FDOT has identified a supporting measure that provides further detail and context about the performance of Florida's transportation system. For pavement condition, the supporting measure is:

- Percent Lane Miles Resurfaced

Percent Lane Miles Resurfaced

SUPPORTING MEASURE

The percent of lane miles resurfaced on the SHS provides a gauge of FDOT's commitment to maintaining and improving roadways by comparing the actual number of lane miles resurfaced each year to what was planned. FDOT has a target of letting (i.e., executing) at least 95 percent of its planned resurfacing lane miles each year. **Figure 2** shows that FDOT achieved 96.9 percent in 2015, having resurfaced 2,829 lane miles compared to 2,919 lane miles that had been planned.

FDOT executed nearly 97 percent of its planned resurfacing lane miles in 2015.

Figure 2: Percent Lane Miles Resurfaced on the State Highway System

SOURCE: Florida Department of Transportation, Office of Maintenance

Pavement Life Getting Longer

The need for faster and more practical evaluation methods prompted FDOT to initiate an accelerated pavement testing program conducted through partnerships with local universities, industry, and the Federal Highway Administration. FDOT estimates that the implementation and optimization of polymer-modified asphalt binders, and the use of fine-graded Superpave asphalt mixtures will save taxpayers more than $4 million each year.

BRIDGE CONDITION

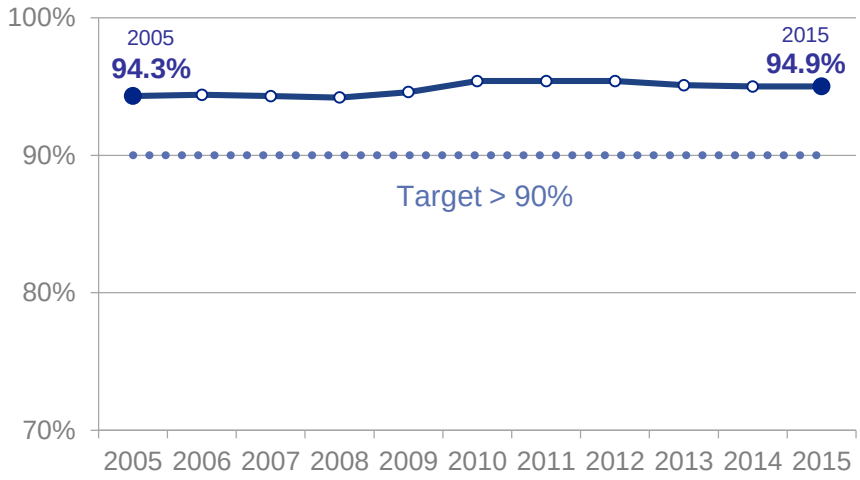
CORE MEASURE

FDOT has identified a series of core measures related to the preservation (maintenance and operation) of the transportation system, which is a primary goal of FDOT. FDOT's core bridge measure is to have 90 percent of the bridges it maintains achieve a National Bridge Inventory (NBI) rating of 6 or higher. The NBI is a Federal Highway Administration requirement for evaluating bridge conditions, based on a 0 to 9 scale with 0 indicating a failed condition and 9 indicating an excellent condition. An NBI rating of 6 or 7 means a bridge is in good condition.

Figure 3 shows that 94.9 percent of all FDOT-maintained bridges meet the standard (i.e., an NBI rating of 6 or higher), which exceeds FDOT's target of 90 percent. This means that the vast majority of Florida bridges do not show evidence of structural deterioration nor are they weight restricted. FDOT takes a proactive approach to bridge maintenance, which has proven to be cost-effective. Preventative maintenance and repairs are performed prior to bridges deteriorating to a level that would result in a much greater repair cost. This helps to ensure that FDOT-maintained bridges meet or exceed their life expectancy, resulting in a lower frequency of replacements due to bridge condition. All FDOT maintained bridges that are open to the public are safe.

Ninety percent or more of State Highway System bridges have met FDOT's standard since 1996.

Figure 3: Percent Bridges on the State Highway System Meeting Department Standards



SOURCE: Florida Department of Transportation, Office of Maintenance

As of 2015 there are 12,225 bridges in Florida. Of that total, FDOT has maintenance responsibility for 6,814 bridges on the SHS, which represents 55.7 percent of all bridges throughout the state. The remaining bridges are maintained by counties (31.7 percent), cities/towns (10.1 percent), and other entities (2.4 percent).

The current condition of each of the 6,814 bridges maintained by FDOT is compared with the condition from its prior inspection. If the structural capacity has been affected, the bridge is reevaluated through load rating tests to determine its current structural capacity. Every bridge is inspected at least once every two years to assess its condition and to identify structures that require further maintenance, rehabilitation, or replacement. Special inspections are conducted after major weather events, such as floods and hurricanes.

Bridges are designed to tolerate a certain amount of structural deterioration and still support legal weight loads. If a bridge is unable to support all legal loads, weight limits are posted or the bridge is closed to traffic until the deficiency can be corrected. As with roadways, heavy trucks contribute to wear-and-tear on bridges.

Since FDOT's bridge inspection program began in 1970, there has been a steady improvement in bridge conditions on the SHS. This is due to an aggressive maintenance and construction program. FDOT also administers federal programs which help fund repairs and replacements of some locally-maintained bridges.

Flagler Memorial Bridge

The Flagler Memorial Bascule (moveable span) Bridge Replacement Design/Build Project in West Palm Beach consists of a complete replacement of the existing bridge with a new four-lane divided bridge. The new bridge will feature four pedestrian outlooks, a new tender house, decorative roadway lighting, and LED lighting beneath the bridge. The vertical clearance will be increased to 21 feet under the bridge. There will also be an eight-foot wide sidewalk on each side. Pedestrian traffic will be separated by permanent concrete barrier walls.

KEY STRATEGIES TO IMPROVE BRIDGE CONDITION

FDOT will help ensure continued progress to improve its core measure of bridge condition through strategies such as those listed below:

- Include projects for all FDOT-maintained bridges needing repair in the Work Program within 12 months of deficiency identification.
- Replace or repair all structurally deficient FDOT-maintained bridges and those bridges posted for weight restriction within six years of deficiency identification.
- Replace all other FDOT-maintained bridges designated for replacement within nine years of deficiency identification.
- Coordinate with FDOT's Motor Carrier Size and Weight Office and Florida Highway Patrol's Office of Commercial Vehicle Enforcement to reduce the illegal operation of commercial motor vehicles exceeding weight limits on Florida's public roads and bridges.
- Continue to monitor bridges scheduled to be replaced and make interim repairs, as necessary, to safeguard the traveling public.

SUPPORTING MEASURES AND INFORMATION

In addition to its core measure for bridges, FDOT has identified several supporting measures and other indicators of progress that provide further detail and context about the performance of Florida's transportation system. For bridge condition, the supporting measures are:

- Bridges with Weight Restrictions
- Bridge Repair Projects Let
- Bridge Replacement Projects Let

Accelerated Bridge Construction

Florida International University held its second annual National Accelerated Bridge Construction (ABC) Conference in December 2015. Industry officials gathered to discuss new techniques and technologies that can cut months and even years off the time it takes to build a bridge. Florida was an early implementer of ABC, starting with the replacement of the Graves Avenue bridge on Interstate 4 in Orlando in 2006, which was accomplished with just two nights of road closures.

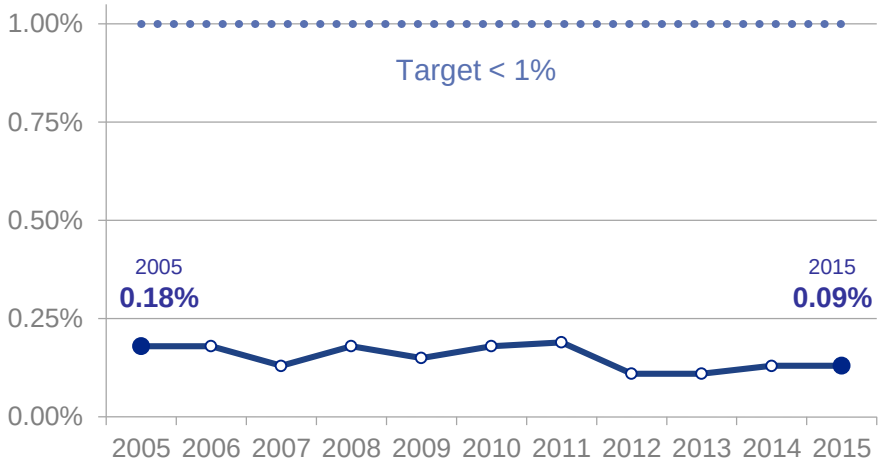
Bridges with Weight Restrictions

SUPPORTING MEASURE

In 2015, only 6 out of 6,814 state maintained bridges had a posted weight restriction.

The supporting measure Percent Bridges with Posted Weight Restrictions on the SHS is one way FDOT assesses its performance related to improving bridge conditions. FDOT has set a target that no more than 1 percent of all SHS bridges should have a posted weight restriction. In 2015, only 6 out of 6,814 state maintained bridges had a posted weight restriction. **Figure 4** illustrates that this equates to 0.09 percent of bridges, which is ten-times better than the established target or ceiling of no more than 1 percent.

Figure 4: Percent Bridges on the State Highway System with Posted Weight Restrictions



SOURCE: Florida Department of Transportation, Office of Maintenance

Bridge Repair Projects Let

SUPPORTING MEASURE

FDOT achieved almost 93 percent of its planned Bridge Repair project lettings in 2015, falling short of its 95 percent target.

The supporting measure Percent Bridge Repair Projects Let (i.e., executed contracts) is another way FDOT measures its commitment to improving bridge conditions. FDOT has set a target of letting at least 95 percent of its planned contracts for bridge repair during the year. **Figure 5** shows that FDOT achieved 92.9 percent of its planned project lettings in 2015, falling short of its 95 percent target.

Figure 5: Percent Bridge Repair Projects Let

SOURCE: Florida Department of Transportation, Office of Maintenance

Bridge Replacement Projects Let

SUPPORTING MEASURE

FDOT achieved over 93 percent of its planned Bridge Replacement project lettings in 2015, falling slightly lower than the 95 percent target.

The supporting measure Percent Bridge Replacement Projects Let is another way FDOT can measure its commitment to improving bridge conditions. FDOT has set a target of letting at least 95 percent of its annual planned contracts for bridge replacements. **Figure 6** shows that FDOT achieved 93.3 percent of its planned project lettings in 2015, falling slightly short of the 95 percent target.

Figure 6: Percent Bridge Replacements Let

SOURCE: Florida Department of Transportation, Office of Maintenance

MAINTENANCE

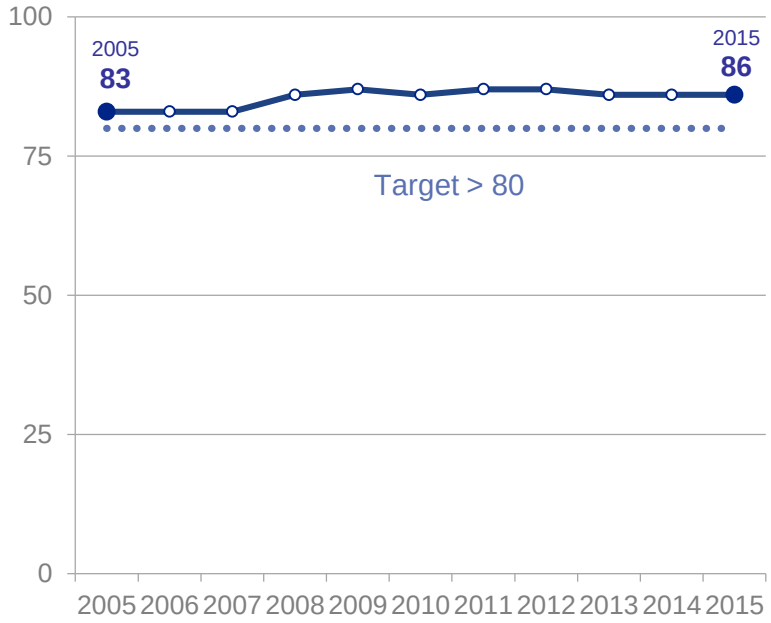
CORE MEASURE

FDOT has identified a series of core measures related to the preservation (maintenance and operation) of the transportation system, which is a primary department goal. As an integral part of preserving the SHS, FDOT has reconfirmed its long-standing commitment to surpass its maintenance standard on the SHS. FDOT is responsible for scheduling and performing routine maintenance on the SHS to help preserve its condition.

FDOT's primary measure is to achieve an overall Maintenance Rating Program score of at least 80 for the SHS. FDOT has met or exceeded its roadway maintenance target every year since 1994. **Figure 7** highlights this accomplishment over the past decade.

FDOT has met or exceeded its roadway maintenance standard every year since 1994—more than a generation of maintenance excellence.

Figure 7: Maintenance Rating of the State Highway System



SOURCE: Florida Department of Transportation; Maintenance Rating Program Level of Maintenance Summary (Annual FY 2014-2015)

Field conditions are evaluated by rating each highway feature and calculating an overall maintenance condition score. Conditions are compared to FDOT standards and a composite state score is set. The maintenance condition rating system evaluates five highway components:

- Roadway – potholes, pavement joints, paved shoulders, and pavement distress
- Roadside – unpaved shoulders, slopes, sidewalks, and fences
- Traffic services – signs, lighting, guardrails, striping, attenuators, handrail, and pavement markers
- Drainage – storm drains, ditches, roadway sweeping, inlets, and pavement edge drain outlets
- Vegetation/aesthetics – landscaping, mowing, litter removal, turf condition, and tree trimming

It is important to maintain roads at an optimal level for driver safety and comfort. Through routine maintenance, highway rest stops are kept clean and attractive, wildflowers are planted along roadsides, roadway striping is kept reflective for safe nighttime travel, guardrails are repaired, signs are kept clean and visible, and potholes are filled. FDOT staff and contractors also mow grass, remove litter, perform bridge inspections, make bridge repairs, clean out ditches and storm drains, and do many other jobs needed to make highway travel easier and safer.

KEY STRATEGIES TO IMPROVE MAINTENANCE

FDOT will help ensure continued progress to improve its core measure of maintenance through strategies such as those listed below:

- Continue to identify and implement practices which reduce the time and cost of preserving the SHS
- Emphasize use of state-of-the-art technologies and innovative contracting methods to increase the efficiency of system maintenance
- Continue to monitor and adjust maintenance standards to preserve the state's investment and provide safe roadways for Florida motorists, including special population groups
- Continue to respond to and evaluate customer input, suggestions, and feedback

SUPPORTING MEASURES AND INFORMATION

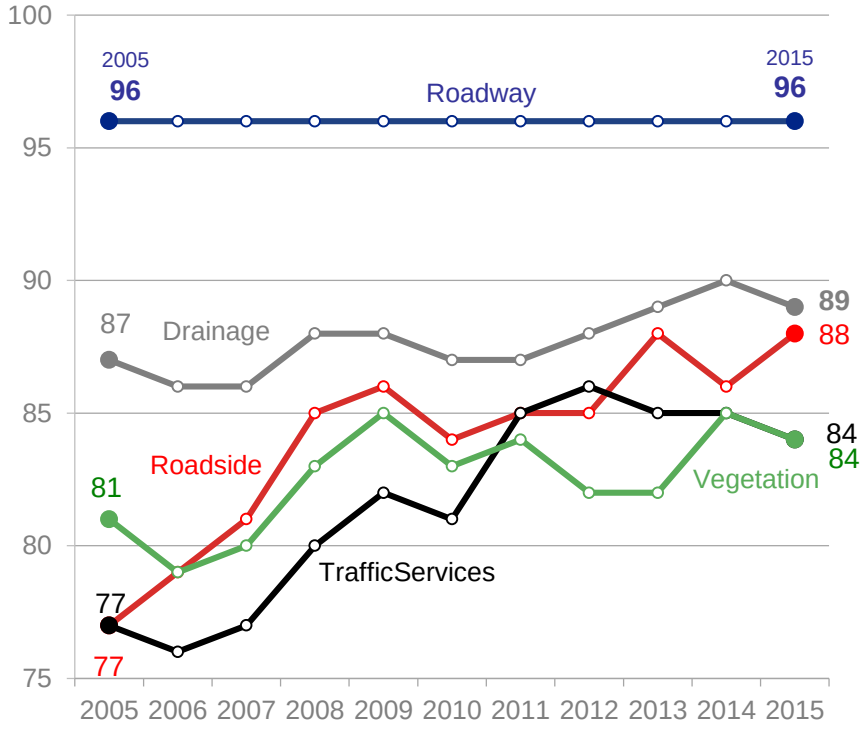
In addition to its core measure on maintenance, FDOT has identified several supporting measures and other indicators of progress that provide further detail and context about the performance of Florida's highway and bridge system. For maintenance, the supporting measures are subcomponents of the overall Maintenance Rating Program score, which includes:

- Roadway Maintenance
- Roadside Maintenance
- Traffic Services Maintenance
- Drainage Maintenance
- Vegetation Aesthetics Maintenance

Scores for each of the five maintenance subcomponents are illustrated in **Figure 8**, followed by an explanation of each subcomponent (i.e., its supporting measures).

All five maintenance supporting measures have remained constant or improved over the past decade – contributing to FDOT's improved maintenance core measure score.

Figure 8: Maintenance Subcomponents



SOURCE: Florida Department of Transportation; Maintenance Rating Program Level of Maintenance Summary (Annual FY 2014-2015)

Roadway Maintenance

SUPPORTING MEASURE

The Roadway Maintenance score has remained at 96 since 2002.

The supporting measure Roadway Maintenance is a way FDOT can assess its progress relative to its commitment to maintenance. Roadway Maintenance evaluates multiple components of the roadway:

FLEXIBLE PAVEMENT (typically asphalt)

- Potholes
- Edge raveling
- Shoving
- Depression/bumps
- Paved shoulder/turnouts

RIGID PAVEMENT (typically concrete)

- Potholes
- Depression/bumps
- Joint/cracking
- Paved shoulder/turnouts

Conditions are compared to FDOT standards and a composite score is calculated between 0 and 100. The Roadway Maintenance score has remained at 96 since 2002. This is a significant measure as it represents the composite of the varied items listed above. As such, FDOT's performance in this area is particularly notable.

Roadside Maintenance

SUPPORTING MEASURE

The Roadside Maintenance score has hovered around the mid to high 80s since 2008.

The supporting measure Roadside Maintenance is a way FDOT can assess its commitment to improving maintenance. Roadside Maintenance evaluates five components of the roadway:

- Unpaved shoulder
- Front slope (a gradual and contoured transition from a roadway's shoulder edge to the ditch or slope)
- Slope pavement (missing, settled or misaligned areas of sloped pavement greater than 10 square feet)
- Sidewalk
- Fence

Conditions are compared to FDOT standards and a composite score is calculated between 0 and 100. The Roadside Maintenance score has hovered around the mid to high 80s since 2008.

Traffic Services Maintenance

SUPPORTING MEASURE

The Traffic Services Maintenance score has leveled-out around the mid 80s since 2011.

The supporting measure Traffic Services Maintenance is a way FDOT can assess its commitment to improving maintenance. Traffic Services Maintenance evaluates nine components of the roadway:

- Raised pavement markers
- Striping
- Pavement symbols
- Guardrail
- Attenuator
- Signs less than or equal to 30 sq. ft.
- Signs greater than 30 sq. ft.
- Object markers and delineators
- Lighting

Conditions are compared to FDOT standards and a composite score is calculated between 0 and 100. The Traffic Services Maintenance score has leveled-out around the mid 80s since 2011.

Drainage Maintenance

SUPPORTING MEASURE

The Drainage Maintenance score has hovered around the high 80s since 2008.

The supporting measure Drainage Maintenance is a way FDOT can assess its commitment to improving maintenance. The ability to quickly drain water from roadways is key to preservation of the roadways and the safety of those using them. Drainage Maintenance evaluates six components of the roadway:

- Side/cross drain
- Roadside/median ditch
- Outfall ditches
- Inlets
- Miscellaneous drainage structure
- Roadway sweeping

Conditions are compared to FDOT standards and a composite score is calculated between 0 and 100. The Drainage Maintenance score has hovered around the high 80s since 2008.

Vegetation Aesthetics Maintenance

SUPPORTING MEASURE

The Vegetation Aesthetics Maintenance score has remained between the low to mid 80s since 2007.

The supporting measure Vegetation Aesthetics Maintenance is a way FDOT can assess its commitment to improving maintenance. Vegetation Aesthetics Maintenance evaluates seven components of the roadway:

- Roadside mowing
- Slope mowing
- Landscaping
- Tree trimming
- Curb/sidewalk edge
- Litter removal
- Turf condition

Conditions are compared to FDOT standards and a composite score is calculated between 0 and 100. The Vegetation Aesthetics Maintenance score has remained between the low to mid 80s since 2007. Effective maintenance in this area also can contribute indirectly to safer conditions for motorists, cyclists, and pedestrians.

Florida Wildflowers

Inspired in part by Florida's highway beautification program, coreopsis (a daisy-like wildflower) has been widely used for roadside plantings. The coreopsis flower was adopted by Florida as its official state wildflower in 1991. Nothing conveys the image of the Sunshine State better than a golden spray of coreopsis spread across the landscape.

TRANSIT STATE OF GOOD REPAIR

CORE MEASURE

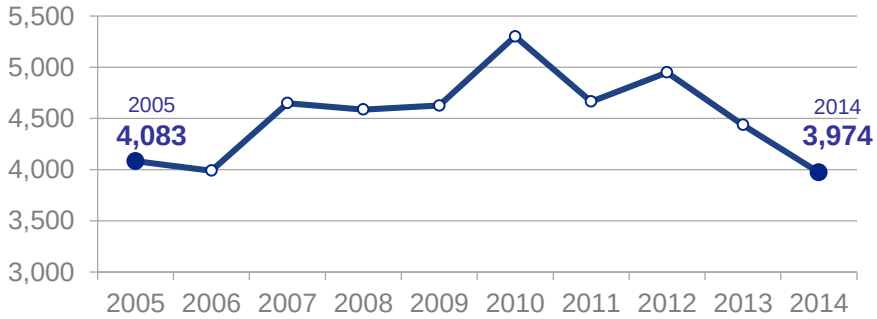
Underinvestment in public transportation infrastructure can have significant consequences.

FDOT has identified a series of core measures related to the preservation (maintenance and operation) of the transportation system, which is a primary goal of FDOT. FDOT has a long-standing commitment in assisting Florida's transit agencies in the area of asset management, including training, technical guidance, and vehicle procurement and inspections. The Federal Transit Administration is emphasizing the need to improve the safety and condition of the nation's transit systems, focusing on transit assets that need to be rebuilt or replaced. Underinvestment in public transportation infrastructure can have significant consequences, such as increased incidents, compromised passenger safety, and higher operating costs due to increased costs of maintaining assets that are being used beyond their useful lives.

A core measure that represents Florida's transit agencies investment in, and preservation of, infrastructure is the number of revenue miles between bus and passenger train failures (i.e. breakdowns). This measure is calculated by dividing the total annual number of revenue miles by the total annual number of revenue vehicle failures statewide. It is an indicator of the average frequency of delays due to vehicle problems or failures. Higher values indicate less failures/breakdowns. A failure is classified as the breakdown of either a major or minor element of a vehicle's mechanical system. Failures are tabulated regardless of whether they result in a vehicle completing or not completing its route. **Figure 9** highlights data from the National Transit Database (NTD) that shows in 2014 Florida's fixed route transit agencies, on average, experienced one breakdown every 3,974 revenue miles.

Over the past decade Florida transit agencies have kept breakdowns to around one per 4,000 revenue miles.

Figure 9: Transit Revenue Miles Between Failures



SOURCE: Florida Department of Transportation; Florida Transit Handbook

Over the past decade this number has moved up and down—decreasing the past couple of years—reflecting changes in levels of maintenance and new vehicle investments by transit agencies in their fixed route systems. As

breakdowns become more frequent, the value of this measure decreases. This measure is representative of the state of good repair of Florida's transit systems. The Federal Transit Administration's focus on asset management is reflected in the recently enacted Fixing America's Surface Transportation (FAST) Act, which supersedes the previous Moving Ahead for Progress in the 21st Century Act (MAP-21).

All transit agencies receiving federal funds are required to develop transit asset management plans and use performance measures to track agency progress in meeting the goals and objectives established in their asset management plans. FDOT has historically monitored and managed transit state of good repair and will update state requirements and measures to reflect the Federal Transit Administration requirements when they become available. Most of Florida's transit agencies have implemented asset management plans based on existing federal requirements. Additionally, FDOT monitors state of good repair through established statewide performance measures.

KEY STRATEGIES TO IMPROVE TRANSIT STATE OF GOOD REPAIR

FDOT will help ensure that continued progress is made to improve its core measure of transit state of good repair through strategies such as those listed below:

- Coordinate with urban transit agencies and metropolitan planning organizations in establishing performance measures and targets in accordance with MAP-21/FAST Act.
- Provide guidance to transit agencies in the development or enhancement of transit asset management plans and programs.
- Provide technical assistance, training and guidance to transit agencies in the field of vehicle maintenance and asset management.

In support of these key strategies, FDOT's Transit Office has, for several years, conducted several programs pertaining to transit vehicle procurement and maintenance. These programs include:

Transit Research, Inspection and Procurement Services (TRIPS) - This program protects the investment of both federal and state dollars, ensuring that the state's vehicle fleets remain in good repair.

Transit Maintenance Analysis and Resource Center (TMAARC) - This program delivers training and technical assistance for state maintenance fleets and aids in keeping vehicles and facilities in a state of good repair.

Preventative Maintenance Planning and Training Program (PrMPT) - This program provides transit agencies tools and resources to establish

maintenance programs. It also includes maintenance compliance inspections through vehicle file audits, bus inspections, and policy and procedure review, ensuring that deficiencies in preventative maintenance practices are identified and corrected.

INTELLIGENT TRANSPORTATION SYSTEMS (ITS)

SUPPORTING MEASURES AND INFORMATION

In addition to its core measures, FDOT has identified several supporting measures and other indicators of progress that provide further detail and context about the performance of Florida's transportation system. For operational Intelligent Transportation Systems (ITS), the supporting measures are:

- ITS Miles Managed by FDOT
- Florida 511 Program (FL511) Calls, Visits, Messages & Alerts

ITS represent the application of real-time information systems and advanced technologies such as transportation management tools to improve the movement of people, goods and services. ITS use advanced technologies to remedy mobility and safety problems, which may delay or possibly eliminate having to build new roads or expand existing roads. As ITS evolve throughout Florida, the development and reporting of operational performance measures are a priority for FDOT to demonstrate and document their benefits.

A number of ITS performance measures have been identified: miles managed by ITS; 511 calls, web hits, app sessions, tweets, and alerts; Road Ranger service stops; incident duration (roadway clearance times); and customer satisfaction.

Intelligent Transportation Systems (ITS)

ITS Florida is a leading advocate for the deployment of technologies that improve the safety, security and efficiency of Florida's surface transportation system. ITS encompass a broad range of wireless and wire-line communications, information processing, advanced computing, and electronics technologies. When integrated into roadways, vehicles, and public transit systems, these technologies can help reduce congestion, enhance mobility options, and improve safety. *www.itsflorida.org*

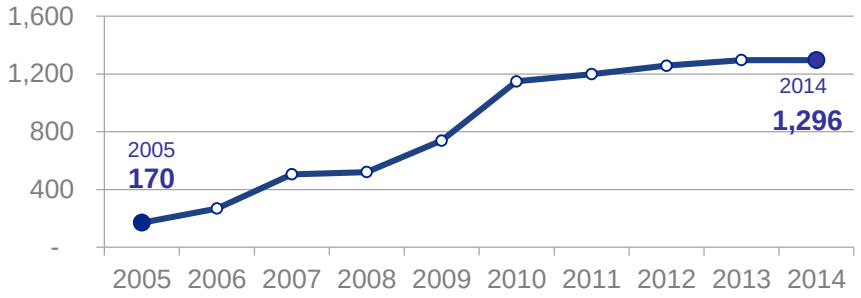
ITS Miles Managed by FDOT

SUPPORTING MEASURE

By 2014, 1,296 ITS miles were managed by FDOT. This represents nearly 11 percent of the State Highway System and 30 percent of the Strategic Intermodal System.

Figure 10 highlights that 1,296 centerline miles were managed by FDOT through ITS in 2014. This represents nearly 11 percent ITS coverage of the SHS and 30 percent ITS coverage of the Strategic Intermodal System (SIS). Extensive ITS deployments have taken place during the past decade throughout the state.

Figure 10: ITS Miles Managed by FDOT



SOURCE: Florida Department of Transportation; Statewide Intelligent Transportation Systems Performance Measures (Annual Report FY 2013-2014)

FL511 Calls, Web Hits, App Sessions, Tweets & Alerts

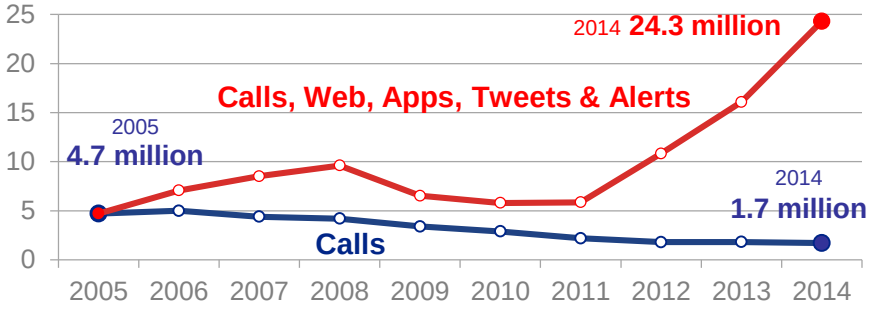
SUPPORTING MEASURE

Over 24 million calls, web hits, app sessions, tweets, and e--mail/text/phone message alerts were made in 2014, keeping travelers on Florida's highways informed.

Florida's 511 program, dubbed FL511, provides accurate real-time information to travelers on traffic and road conditions, alternate routes (during incidents), construction, weather-related problems and public transportation information/options.

Approximately 1.7 million FL511 calls were made in 2014. Tracking phone calls to FL511 is no longer the sole indicator of system usage as more travelers use automated and mobile applications. **Figure 11** shows that over 24 million calls, web hits, app sessions, tweets, and e-mail/text /phone message alerts were made in 2014, keeping travelers on Florida's highways informed and engaged to an unprecedented degree. The decrease in calls beginning in 2006 reflects the greater choice of information sources associated with increasing use of smart phones and a wider range of apps.

Figure 11: Number of 511 Calls, Web Hits, App Sessions, Tweets & Alerts



SOURCE: Florida Department of Transportation; Florida's 511 Progress Report

INCIDENT MANAGEMENT

In addition to its core measures, FDOT has identified several supporting measures and other indicators of progress that provide further detail and context about the performance of Florida's transportation system. For operational incident management, the supporting measures are:

- Road Rangers Service Assists
- State Average Roadway Clearance Times
- State Average Rapid Incident Scene Clearance (RISC) Times

SUPPORTING MEASURES AND INFORMATION

Vehicle crashes on highways typically affect far more travelers and businesses than those directly involved in the crash. It is critical that crash victims be attended to as soon as possible to reduce the possibility of death or serious injury. It is not unusual for major highways to be partially or fully closed while vehicles and debris are removed, which creates or compounds traffic congestion and causes delay for travelers in the vicinity of the crash. Occasionally, hazardous materials—some of which can be life-threatening—and other commodities are spilled as a result of these crashes or as a result of crashes on other transportation modes such as rail. Quickly responding to and clearing an incident allows the highway to return to normal capacity and traffic flow sooner. Moreover, the faster incidents can be cleared the greater the reduction of secondary crashes.

In order to improve incident management, Florida has a statewide Traffic Incident Management Program, which is comprised of road ranger service, roadway clearance, rapid incident clearance, and traffic management teams.

Road Ranger Service Assists

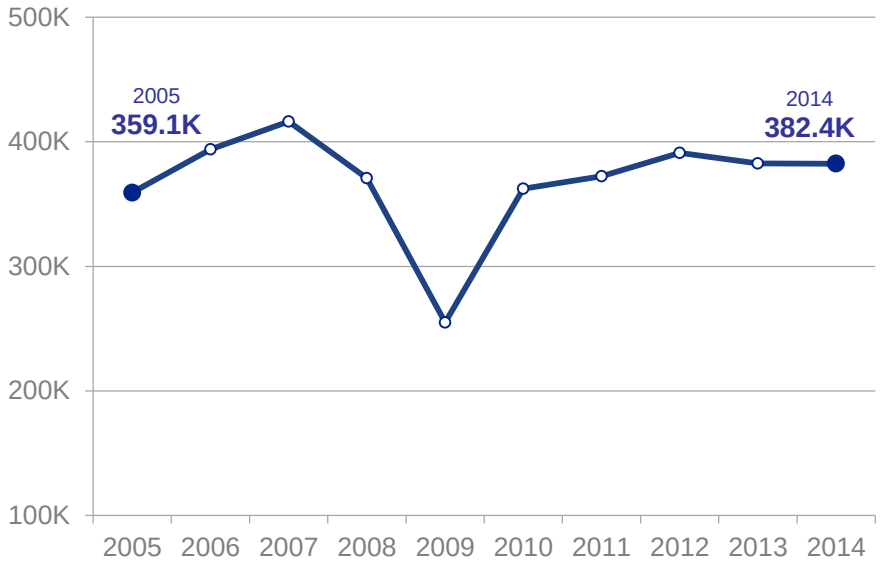
SUPPORTING MEASURE

The Road Rangers service is provided by FDOT and its partners, at no charge, to motorists. It consists of roving vehicles which patrol congested areas and high incident locations along urban freeways. Services can include providing a limited amount of fuel, assisting with tire changes, and other types of minor emergency repairs. Since the program's inception in 1999, Road Rangers have made over 4 million service assists. The United States Department of Transportation estimates service patrols, such as Road Rangers, can reduce travel delays by up to 45 percent.

All seven FDOT Districts and the Turnpike Enterprise provide Road Ranger services covering almost 2,000 miles of state roads. Other than in 2008/09 when the legislature instituted a 50 percent reduction in Road Ranger funding (which it re-instated the following year), Road Rangers have consistently assisted over 350,000 motorists annually. **Figure 12** shows that Road Rangers provided services to 382,403 motorists in 2014.

Service patrols, such as Road Rangers, can reduce travel delays by up to 45 percent.

Figure 12: Road Ranger Service Assists



SOURCE: Florida Department of Transportation, State Traffic Engineering Operations Office; Statewide Intelligent Transportation Systems Performance Measures (Annual Report FY 2013-2014)

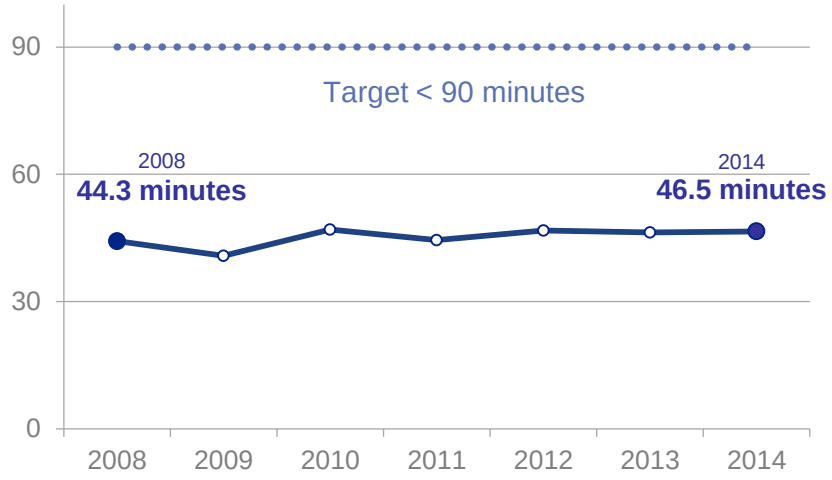
State Roadway Clearance Times

SUPPORTING MEASURE

In an effort to provide the traveling public a cost-effective and high quality transportation system, FDOT and the Florida Highway Patrol have implemented the "Open Roads Policy." The goal of this policy is to clear damaged vehicles, spilled cargo and debris from roadways as soon as it is safe to do so. A combined target of agencies is for all incidents to be cleared within 90 minutes of the arrival of the first responding officer, with the understanding that this target may not be feasible in more complex scenarios, which may require additional time. **Figure 13** shows that the average clearance time in 2014 was 46.5 minutes, which is far below the 90-minute target of the "Open Roads Policy." It is recognized that at some point it might be appropriate to reevaluate and reset this target.

The average clearance time in 2014 was 46.5 minutes, which is far below the 90-minute target of the "Open Roads Policy."

Figure 13: State Average Roadway Clearance Times (minutes)



SOURCE: Florida Department of Transportation; Statewide Intelligent Transportation Systems Performance Measures (Annual Report FY 2013-2014)

Rapid Incident Scene Clearance (RISC) Times

SUPPORTING MEASURE

The Rapid Incident Scene Clearance (RISC) Program is an innovative, incentive-based program to meet the goal of safely clearing major highway incidents and truck crashes. The RISC program is most often used during major incidents that cause complete roadway closures on limited-access facilities where it is imperative to quickly restore traffic flow. RISC is typically activated for incidents involving:

- Trucks over 16,000 pounds
- Motor homes and motor coaches
- Buses capable of carrying 16 or more passengers
- Aircraft, and
- Large yacht-type boats and mobile homes

Roadway clearance times for crashes on major highways vary. **Figure 14** highlights that the average clearance time increased in 2012 and 2013, but decreased (improved) to 70 minutes in 2014. Although the average falls within the 90-minute target, FDOT reviews all events that do not meet the 90-minute target to ensure that responders are aware of the RISC activation criteria.

The average RISC clearance time increased in 2012 and 2013, but decreased (improved) to 70 minutes in 2014.

Figure 14: State Average RISC Clearance Times (minutes)

SOURCE: Florida Department of Transportation; Rapid Incident Scene Clearance (RISC) Annual Report

FDOT now requires specialized equipment and trained operators to quickly remove heavy trucks hauling larger loads after an incident. Consistent with the "Open Roads Policy," several FDOT Districts have adopted an innovative clearance strategy by implementing the RISC Program to significantly reduce the time to clear major accidents and incidents. This program utilizes vendors who can provide specialized heavy-duty wreckers and equipment to rapidly clear the roadway on limited access facilities.

Florida also has a State Emergency Response Team composed of staff from key state agencies to ensure the state is prepared to respond to emergencies, recover from them and mitigate their impacts. The State Emergency Operations Center (SEOC) provides direction and coordination of emergency response and recovery efforts before, during and after serious emergencies or disasters. When the magnitude of an emergency or disaster exhausts local response capabilities, the SEOC may be activated to respond.

Traffic Incident Management (TIM) Teams

Traffic Incident Management (TIM) Teams bring together all of the agencies involved in clearing an accident, including Florida Highway Patrol (FHP), local law enforcement, fire departments, emergency medical personnel, towing companies, and spill response firms, along with FDOT Traffic Management Center (TMC) operators, Road Rangers, and maintenance crews. TIM Teams strive to reduce the time needed to reopen travel lanes and get traffic moving again by reviewing past response actions, exploring ways to improve incident management, and coordinating upcoming planned events or planning for unplanned events, such as hurricanes, wildfires, and floods. TIM Teams are currently active in all of FDOT's Districts and Florida's Turnpike Enterprise.

Road Rangers Thrill Users

"I just wanted to say that I am so thankful for the Road Rangers. I was driving my 5-year-old son home from Tampa to Sarasota when my tire blew. I had been pulled over for just a minute when along came Roger the Road Ranger! He was polite, informative, and very efficient! He changed my tire and had me on my way. I am so thankful for this program - I didn't know it existed!"

Thanks again! L. Nickelson

FOR THE FUTURE

FDOT strives to be forward thinking in regards to performance measurement. Many measures can be valuably used year after year. But DOTs and the states they serve continue to both lead change and adapt to change. This year we are introducing a section in each performance chapter that identifies potential measurement considerations for the future.

Multi-Modal

Expand preservation (maintenance and operating) performance in future reports to include measures for additional modes of transportation, subject to data availability. Airport inspection data, for example, is a potential source for future reporting.

Transit Maintenance

Consider using vehicle condition and average fleet age as the primary focus consistent with the direction from MAP-21 on performance measurement.

Bicycle & Pedestrian Facilities

Include bicycle and pedestrian facilities from a maintenance perspective, including facilitating access to transit.

Signal Systems

Add measures related to the performance and functionality of traffic signal systems, including signalization that supports transit operations on congested corridors.

Express Lanes and Arterial Management System

Future data will allow for operational measures such as travel time reliability on these facilities.

Bridges

FDOT is working on a Health Index Measure for the bridge program as a way to represent a logical way to make program adjustments.

Cost Effectiveness

Relate spending to condition as a means for addressing system performance in the context of agency performance.

Incident Influence Time

A measure addressing the amount of time that traffic incidents impact or "influence" traffic conditions would be appealing from a transportation operations standpoint. It would, however, require fully instrumented freeways (cameras, etc.), as the resumption of normal traffic flow can take several hours even after responders leave the scene of an incident.

Florida Department of Transportation 2015 Performance Report

Mobility

Efficient Movement of People and Goods

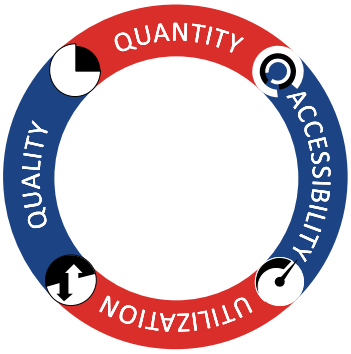
MOBILITY

This report is part of the Performance-Based Planning and Programming Process used by the Florida Department of Transportation (FDOT). For a description of that process, updates to this report and other FDOT transportation performance reporting initiatives, go to FDOTPerforms.org.

INTRODUCTION

Mobility, the movement of people and goods, is transportation's essential function. Moving people and goods efficiently, affordably, and reliably is vital to Florida's economic prosperity. As travel demand increases and changes, Florida continues to improve the planning, development, and operation of our multimodal transportation system. By providing mobility, FDOT and other transportation system operators make a significant contribution to Florida's economic competitiveness and quality of life.

Florida travel is diverse. People use multiple modes of transportation to commute to jobs, conduct business, and obtain services for many other purposes. Raw materials, finished products, and packages comprise a robust freight movement system of air cargo, trucking, seaports, and freight railroads—and the connections between these modes. Because mobility is so vital, measuring mobility performance is likewise essential.



Core Measures cover the 4 dimensions of mobility

In order to adequately address mobility by mode from a multimodal perspective, all four mobility core measures should be considered.

FDOT's core mobility measures include:

- Travel Quantity
- Travel Quality
- Accessibility
- System Utilization

Together they provide a multimodal picture of how much the transportation system is being used, how travelers experience the system, how easy or hard it is to engage in activities using the system, and what capacity remains in the system. In order to adequately address mobility by mode or from a multimodal perspective, all multimodal performance measures from all four core measures should be considered.

Each year as new data is available, FDOT attempts to provide a more complete and diverse presentation of mobility performance. The measures contained in this report utilize the most recent available data. If you have any questions regarding data comparisons of prior year performance reports, please contact FDOT's Transportation Statistics Office at www.dot.state.fl.us/planning/statistics/.

2015 PERFORMANCE HIGHLIGHTS

Mobility is a strategic FDOT priority. Key performance highlights are:

- While overall vehicle miles traveled (VMT) remained relatively stable between 2005 and 2014, VMT per capita decreased by 9.4 percent on the State Highway System (SHS) and 3.9 percent on the Strategic Intermodal System (SIS). Florida population continues to grow, but Floridians are travelling less.
- Public transit ridership decreased slightly in 2014 from the prior year—although ridership has generally trended upwards since 2010.
- Florida's Amtrak ridership has increased by 29 percent since 2005, but declined from 1.2 to 1.1 million trips over the past two years.
- Freight truck tonnage has trended upwards since 2011, but decreased slightly in 2014. Air cargo tonnage remains relatively flat, sea freight tonnage has decreased steadily since 2005, while rail freight tonnage has increased since 2008.
- Vehicle hours of delay during the peak period on the SHS and the SIS has been decreasing since 2009—from 107.6 to 79.1 thousand delay hours on the SHS and from 51.5 to 43.1 thousand delay hours on the SIS. Delay reduction on higher travelled roads translates into time and cost savings for users.
- Travel time reliability on freeways during the peak period trended upward between 2005 and 2014—from 79.5 to 81.3 percent for all vehicles and from 76.7 to 78.6 percent for trucks.
- On-time airport departures increased from 77.5 to 80.5 percent, while on-time overall Amtrak rail departure reliability from Florida stations between 2005 and 2014 decreased dramatically from 64.9 to 32.9 percent.
- Florida roads are more accommodating of pedestrians and bicyclists as sidewalk mileage on the SHS in urban areas increased from 59.4 to 63.6 percent between 2011 and 2014, while bike lane and shoulder mileage increased from 57.6 to 60.3 percent.
- Miles of severely congested roads have decreased over the past decade from 5.4 to 4.7 percent and from 3.1 to 1.9 percent respectively on the SIS and the SHS—although the percentage of miles of severely congested roads on the SIS has increased since 2012.

TRAVEL QUANTITY

CORE MEASURE

How much?

FDOT has identified a series of core measures and supporting measures related to transportation system mobility. Travel quantity, as a core measure, reflects the magnitude of travel on the system, or a particular facility or transportation service—how many people are served and how much freight is moved. The supporting measures for travel quantity are:

- Vehicle Miles Traveled During Peak Period
- Vehicle Miles Traveled During Peak Period Per Capita
- Combination Truck Miles Traveled
- Transit Passenger Trips
- Aviation, Seaport, and Rail Passenger Trips
- TEU (20-foot equivalent unit) Containers
- Freight (Truck, Seaport, Rail, Aviation) Tonnage

Vehicle Miles of Travel

SUPPORTING MEASURE

Figure 1 shows State Highway System (SHS) and Strategic Intermodal System (SIS) vehicle miles traveled (VMT) in millions of miles during the peak period over a ten year period. VMT during the peak period is an indicator of system demand at the time of greatest need/use. Overall, VMT has remained relatively stable with a slight dip beginning in 2008 around the time the economic recession was at its deepest. VMT has increased slightly since 2012 on both the SHS and the SIS.

Growing—or even steady—VMT underscores the importance of continued investment in maintenance, capacity improvements, and improved operations to maximize the efficiency of the transportation system. Asset management and performance management/measurement are closely connected.

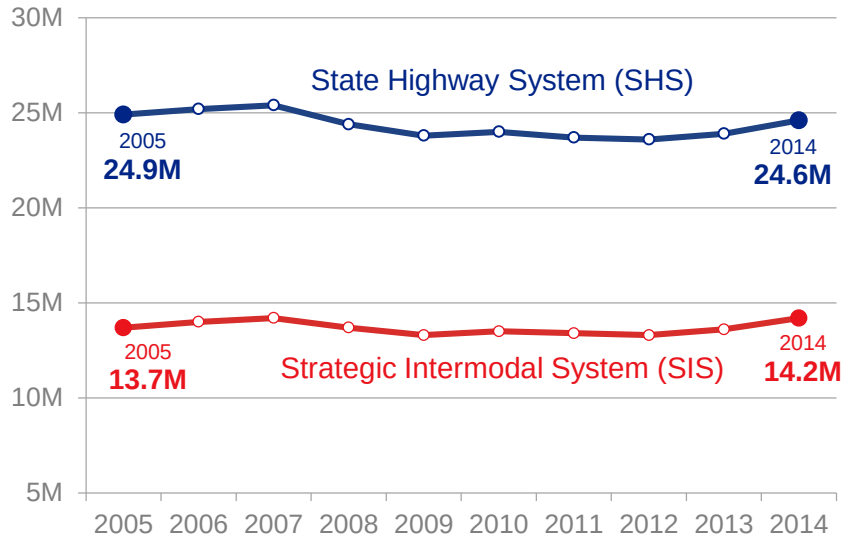
Will VMT Grow?

Transportation agencies are responding to a wide variety of global and domestic events and trends—economic, environmental, political, safety, social, and technological—that impose new challenges and present new opportunities. Transportation planning, performed by professionals with the necessary knowledge and expertise, can play a key role in helping agencies making transformative changes by supporting and enabling them to successfully address the complex issues facing state DOTs.

NCHRP Report 798: Supporting Strategic Decisionmaking

Vehicle miles traveled (VMT) during the peak period is an indicator of system demand at the time of greatest need/use. VMT has increased slightly since 2012 for both the SHS and the SIS.

Figure 1: Vehicle Miles Traveled During Peak Period (millions)



SOURCE: FDOT Multimodal Mobility Performance Measures Source Book

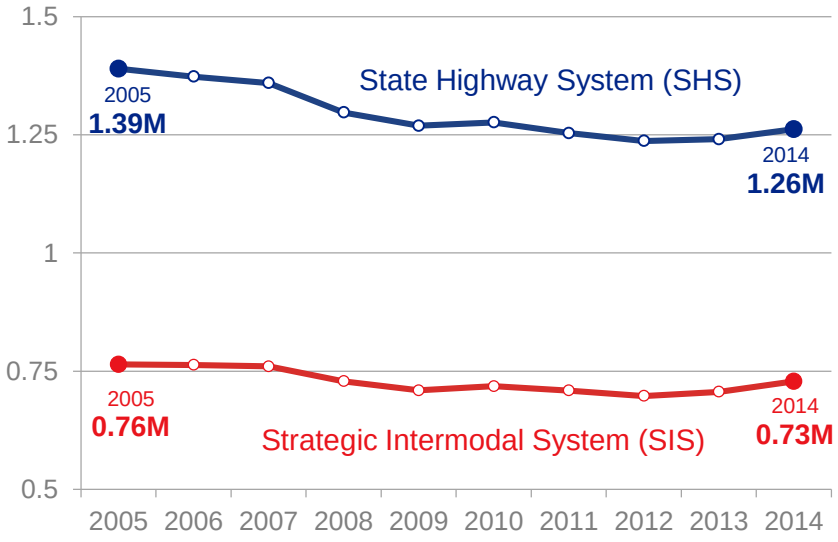
Vehicle Miles Traveled per Capita

SUPPORTING MEASURE

Figure 2 shows that VMT during the peak period per capita (i.e., per person) declined on both the SHS and the SIS over the past decade (9.4 and 3.9 percent respectively), but began to move upward in 2013. Depending on the extent to which this trend will continue, it could have a significant impact on satisfying future system capacity needs.

VMT per capita has decreased by 9.4 and 3.9 percent respectively on the SHS and the SIS between 2005 and 2014.

Figure 2: Vehicle Miles Traveled During Peak Period Per Capita



SOURCE: FDOT Multimodal Mobility Performance Measures Source Book

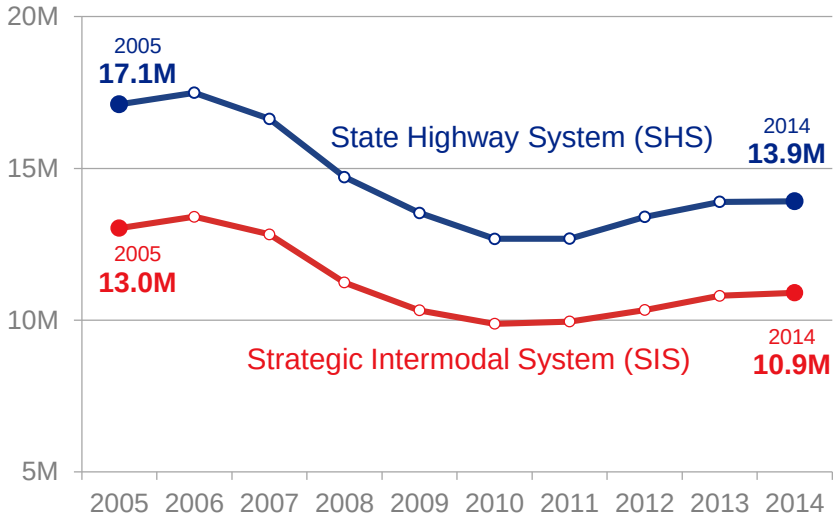
Combination Truck Miles Traveled

SUPPORTING MEASURE

Combination truck miles traveled is a measure of transportation system usage to move the vast quantity of goods and materials needed by consumers and producers. Combination vehicles typically consist of a tractor and a trailer. As shown in **Figure 3** combination truck miles traveled was nearly level for the past year on the SHS and the SIS. While miles traveled have been trending upward recently, they are still below 2005/2006 levels. Notably, as truck miles traveled increases, economic growth increases as well, along with the need to add system capacity.

Combination truck miles traveled is a measure of transportation system usage to move vast quantities of goods and materials. While miles traveled have been trending upward, they are still below 2005/2006 levels.

Figure 3: Combination Truck Miles Traveled (millions)



SOURCE: FDOT Multimodal Mobility Performance Measures Source Book

Freight Mobility and Trade Plan

FDOT's Office of Freight, Logistics and Passenger Operations (FLP) serves as a resource to better connect, develop, and implement the freight planning process. That process is aimed at maximizing the use of existing facilities while integrating and coordinating the various modes of transportation, including the combined utilization of public and private facilities and services.

Annually, the FLP Office allocates funds toward transportation infrastructure improvements spanning all transportation modes. It aligns multimodal transportation initiatives with the statewide priority to transform Florida into a global hub for trade, logistics, and manufacturing-oriented activities.

Transit Passenger Trips

SUPPORTING MEASURE

Transit options and access can improve local and regional mobility and livability for many Florida communities. FDOT's target is to increase transit ridership at twice the rate of population growth.

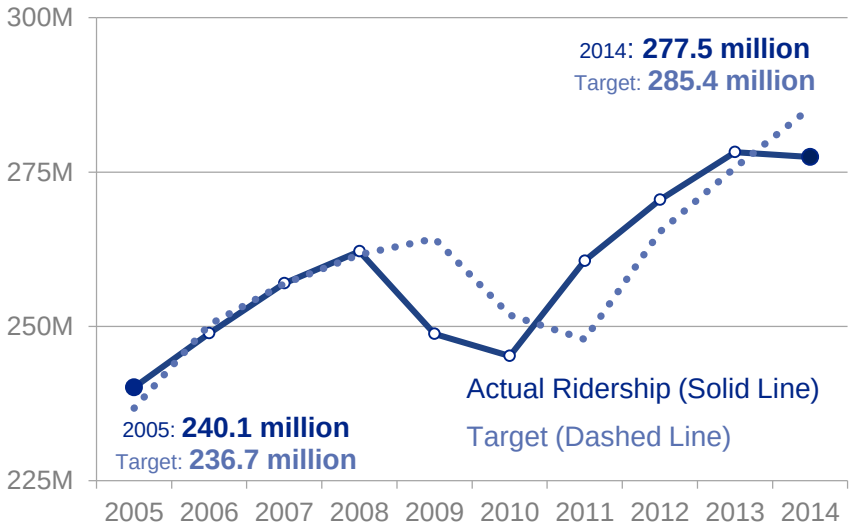
FDOT is committed to assisting its partners to increase transit ridership. Approximately 91 percent of Floridians live in urban areas and 80 percent live in transit-served areas. Increased reliance on transit, particularly when combined with less reliance on auto travel, helps to reduce greenhouse gas emissions while providing a sustainable transportation system.

Figure 4 shows that passenger trips served by transit throughout Florida's 31 fixed-route transit systems[1] (including Tri-Rail and SunRail, but not Amtrak) have been increasing over the past decade, albeit with slight dips in 2009, 2010 and 2014. In 2014 there were approximately 277.5 million transit trips in Florida, a slight decrease (less than 0.3 percent) from 2013—falling short of the target of 285.4 million transit trips.

FDOT uses the ratio of transit growth to population growth as a measure to evaluate transit ridership performance. For most of the past decade Florida's transit ridership growth was near to, or more than, the target of twice the state's population growth rate.

In 2014 there were over 277.5 million transit trips in Florida, a decrease of nearly 0.3 percent from 2013.

Figure 4: Annual Transit Passenger Trips



SOURCE: FDOT Multimodal Mobility Performance Measures Source Book

Note: Population data used to assess the ridership target came from the Office of Economic and Demographic Research.

[1] In 2015 Florida had 31 fixed route transit agencies. Only the urban systems are reported in these ridership numbers.

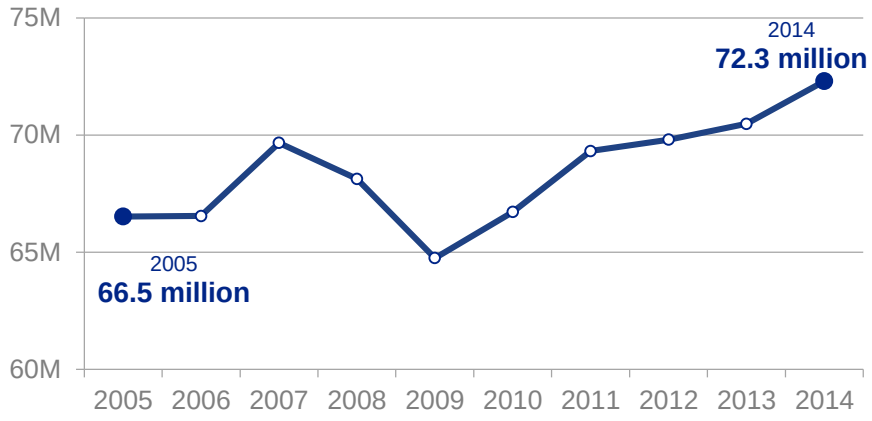
Aviation Passenger Boardings

SUPPORTING MEASURE

Aviation boardings increased to 72.3 million in 2014.

Figure 5 illustrates Florida's overall growth in aviation passenger boardings between 2005 and 2014. The number of passenger boardings increased in 2014 to 72.3 million, with decreases occurring in 2008 and 2009, along with increases occurring thereafter. The five-year upward trend since 2009 underscores Florida's special attraction as both a tourist and a business origin/destination—bolstering the state's competitive position.

Figure 5: Annual Aviation Passenger Boardings



SOURCE: FDOT; Florida Transportation Indicators: Annual Enplanements at Major Florida Commercial Airports, www.floridatransportationindicators.org

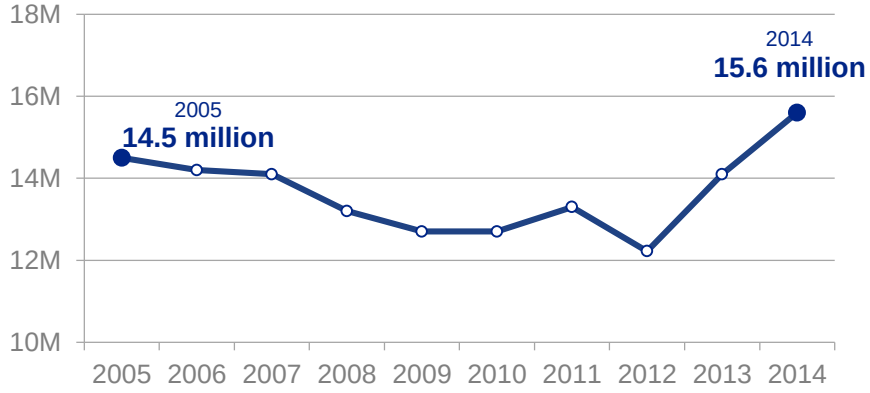
Seaport Passenger Trips

SUPPORTING MEASURE

60 percent of all U.S. cruise passengers embark from Florida seaports.

Figure 6 shows Florida's increase in seaport passenger (cruise) trips between 2005 and 2014. The number of trips surpassed the previous high in 2005 of 14.5 million, with slight decreases thereafter to 12.2 million in 2012. However, 2014 saw a sharp 27.6 percent increase over 2012 levels to 15.6 million. Significantly, 60 percent of all U.S. cruise passengers embark from Florida seaports. If this trend continues it will have an even greater impact on the state's economy.

Figure 6: Annual Seaport Passenger Trips



SOURCE: FDOT Multimodal Mobility Performance Measures Source Book

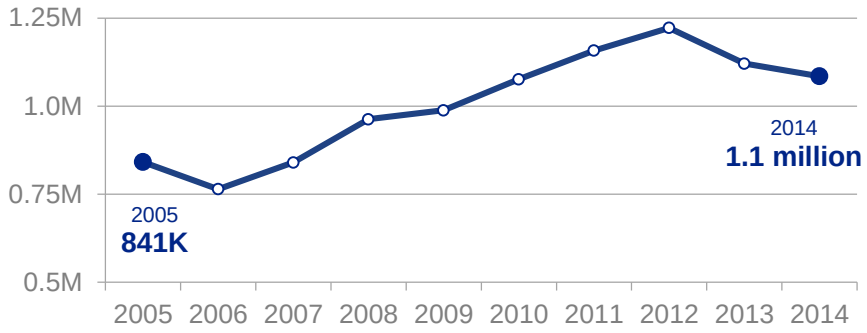
Rail Passenger Trips

SUPPORTING MEASURE

The rail passenger measure is the annual number of revenue paying Amtrak passengers (this does not include Tri-Rail or SunRail). As **Figure 7** shows, ridership started trending upward after 2006, but declined over the past two years to 1.1 million trips in 2014.

Amtrak rail ridership has been generally trending upward, with 1.1 million trips in 2014.

Figure 7: Annual Rail Passenger Trips on Amtrak



SOURCE: FDOT Multimodal Mobility Performance Measures Source Book

TEU (20-foot equivalent unit) Containers

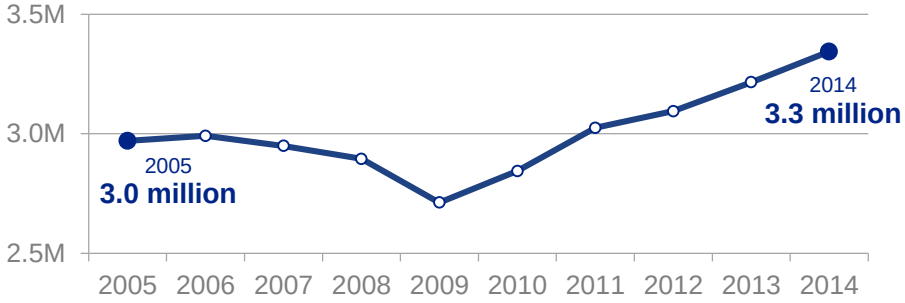
SUPPORTING MEASURE

The safe, effective and efficient movement of goods is key to Florida's economic strength and growth. The 20-foot equivalent unit (TEU) container provides an approximate gauge of intermodal container movements. The TEU is based on the volume of a 20-foot-long intermodal container, a standard-sized metal box which can be easily transferred between different modes of transportation, such as ships, trains and trucks.

Figure 8 shows that since 2009 Florida has experienced about a 23 percent increase in TEUs moved through Florida seaports, reflecting a number of positive trends including expanded economic activity/trade, and use of intermodal transportation. If this rate of growth continues over the next decade and beyond, the state's investments in system capacity, intermodal connectivity, and improved transportation operations will become even more important to accommodate economic expansion.

Since 2009 Florida has experienced about a 23 percent increase in TEUs moved through Florida seaports.

Figure 8: TEU Containers Moved Through Florida Seaports



SOURCE: FDOT Multimodal Mobility Performance Measures Source Book

Freight Tonnage

SUPPORTING MEASURE

Freight tonnage indicates the extent to which freight is moving on Florida's transportation system. Products and raw materials increasingly are moving between origins and destinations using more than one mode of transportation.

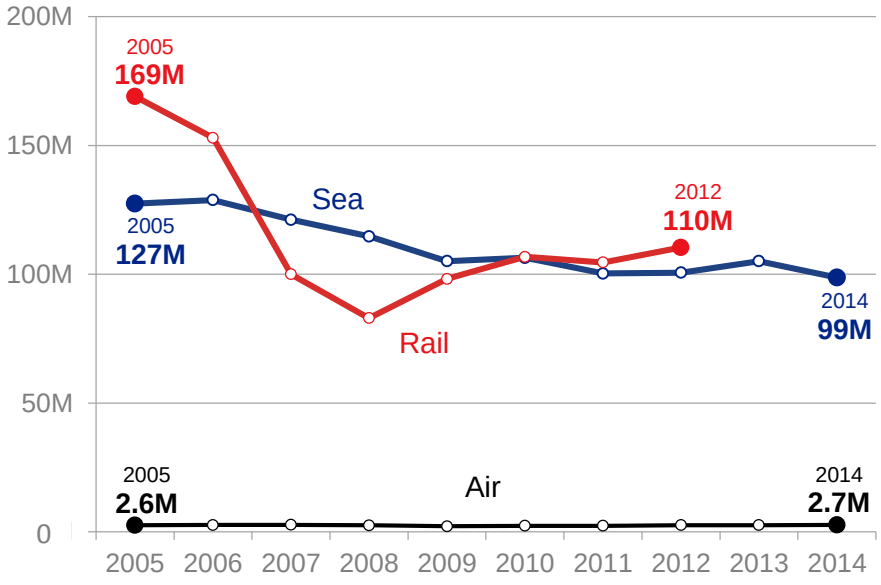
This measure indicates the extent to which freight is moving on Florida's transportation system across the various modes of transportation. It is useful in terms of identifying any overall trends.

Figures 9(a) and **9(b)** provide a ten year trend of Florida freight tonnage by mode. Products and raw materials increasingly are moving between origins and destinations using more than one transportation mode—making connectivity with the Strategic Intermodal System (SIS) of particular significance (data for rail tonnage is not available for 2013 or 2014).

Figure 9(a): Freight Tonnage by Truck

SOURCE: FDOT Multimodal Mobility Performance Measures Source Book

Figure 9(b): Freight Tonnage by Sea, Rail, and Air



SOURCE: FDOT Multimodal Mobility Performance Measures Source Book

Goods movement is part of a dynamic and fluid logistics system in which shippers and receivers of goods and raw materials strive to make the most cost-effective use of each available mode. Florida is well positioned to meet these flexible requirements, particularly through its extensive SIS. As seen above in **Figures 9(a)** and **9(b)**, Florida freight trends indicate that:

- Tonnage by truck was uneven from 2005 to 2014, but generally has been increasing over the past three years—as the economy has improved and intermodal movements have increased.
- Warehousing and distribution rely heavily on trucking, and some of this growth may reflect the advantages of improved logistics favoring surface movement of goods and materials.
- An increase in truck tonnage also translates generally into a trade-off relationship between economic growth inputs and additional roadway and bridge maintenance to accommodate economic expansion.
- Air cargo tonnage has remained flat over the ten-year period. Typically air cargo is low weight/high value, so measuring it in terms of tonnage underestimates its economic importance. Nationally, advances in ground distribution seem to have lessened the overall demand for air freight.

KEY STRATEGIES TO IMPROVE TRAVEL QUANTITY

FDOT will help ensure continued progress to improve its core measure of travel quantity through strategies such as those listed below. It is also important to note that travel quantity is impacted by trends beyond FDOT's control including fuel prices and economic conditions:

- Promote multi-modal options, including non-motorized travel, for people movement within existing and future corridors.
- Implement FDOT's Complete Streets Policy to improve access and mobility for public transit riders, pedestrians and bicyclists.
- Introduce new modal options or develop new transportation hubs or corridors when existing facilities cannot meet mobility or connectivity needs.
- Enhance Florida's role as a global hub that provides efficient and reliable connectivity for trade and visitors.
- Ensure connectivity between the Strategic Intermodal System (SIS) and regional and local transportation facilities to support complete end-to-end trips.
- Promote options that increase vehicle occupancy.

TRAVEL QUALITY

CORE MEASURE

How good or bad?

FDOT has identified a series of core measures and supporting measures related to transportation system mobility. The travel quality core measure helps to assess how good or bad the travel experience is using a range of supporting measures:

- Level of Service (LOS)
- Pedestrian and Bicycle LOS
- Vehicle Hours of Delay
- Combination Truck Hours of Delay
- Travel Time Reliability
- Aviation and Rail Departure Reliability
- Transit Headways

Level of Service (LOS), delay and reliability each describe the quality of our transportation system in different ways. At a facility level, LOS is an excellent measure of a user's perspective of how well the facility is operating, and can provide insight into its capacity utilization. Travel time reliability is important because most travelers are less tolerant of unexpected delays, because such delays have larger consequences than drivers face with everyday congestion. Travelers also tend to remember the few bad days they spent in traffic, rather than an average time for travel throughout the year.

Multimodal Performance Measures

Since moving people and goods is the core function of transportation agencies, performance measures are essential. To adequately address this topic, mobility has been divided into four conceptual dimensions: quantity of travel, quality of service, accessibility, and utilization. There are several FDOT research studies to develop and improve travel time reliability measures and reporting techniques. There are subtle differences between travel time variability (the difference in travel time) and reliability (which uses statistical measures to quantify).

Level of Service (LOS)

SUPPORTING MEASURE

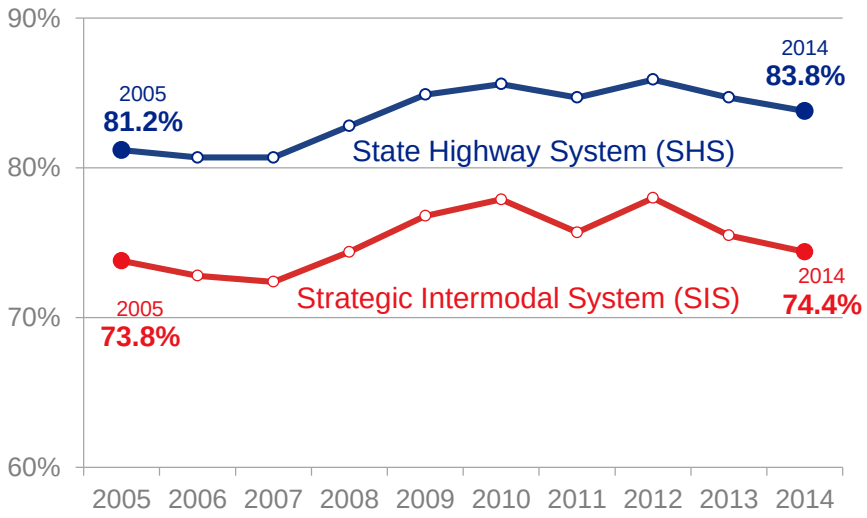
Level of Service (LOS) provides a measure for evaluating roadway performance by relating travel demand to roadway capacity. Various LOS grades are established along with thresholds that provide a basic standard of acceptability.

FDOT's policy is to plan and operate the State Highway System (SHS) at acceptable operating conditions.

The overall LOS trend since 2005 is one of generally steady travel improvement, but a decrease on both the SHS and the Strategic Intermodal System (SIS) began after 2012. During 2014, 83.8 percent of the SHS and 74.4 percent of the SIS during the peak period of travel met or exceeded acceptable LOS criteria—a decrease of 1.1 percent and 1.5 percent respectively over the prior year (as shown in **Figure 10**). Maintaining acceptable LOS performance is important for Florida to support the effective and efficient movement of people and goods.

The overall LOS trend since 2005 is one of generally steady travel improvement, but a decrease occurred on both the SHS and the SIS after 2012.

Figure 10: Travel Meeting Acceptable LOS During Peak Period



SOURCE: FDOT Multimodal Mobility Performance Measures Source Book

Bicycle & Pedestrian LOS

SUPPORTING MEASURES

84 percent of SHS roads in urban areas had a bicycle LOS of "C" or better in 2013.

45 percent of SHS roads in urban areas had a pedestrian LOS of "C" or better in 2013.

Bicycle LOS is a measure of the quality of service a roadway provides to bicyclists. Unlike automobile LOS which is largely affected by the number of motorized vehicles on the road, bicycle LOS is based on factors and conditions that are particularly important to bicyclists:

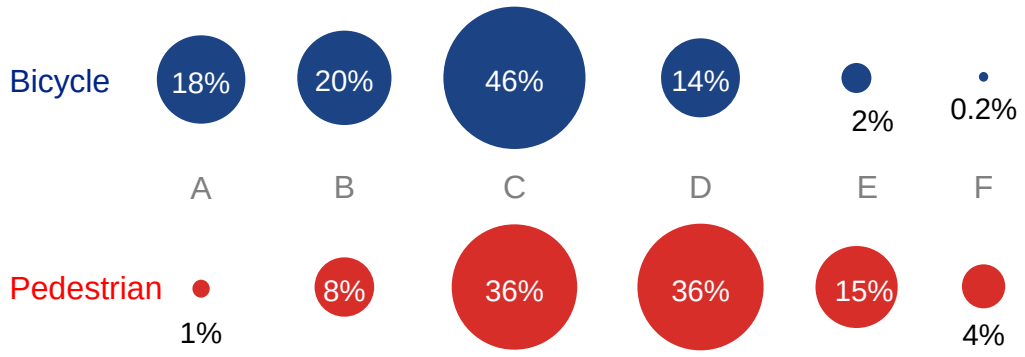
- Presence of bike lanes/shoulders and other outside travel lane considerations
- Motorized vehicle volumes (less being better)
- Motorized vehicle speeds (lower being better)
- Heavy vehicle (truck) volumes (less being better)
- Pavement conditions

Pedestrian LOS is a measure of the quality of service a roadway provides to pedestrians. Similar to bicycle LOS, pedestrian LOS is based on factors and conditions that are important to pedestrians:

- Existence of a sidewalk
- Lateral separation of pedestrians from motorized vehicles
- Motorized vehicle volumes (less being better)
- Motorized vehicle speeds (lower being better)

Figure 11 highlights that 84 percent of SHS roads in urban areas had a bicycle LOS of "C" or better in 2013 (data for 2014 is not available), while only 45 percent of SHS roads in urban areas had a pedestrian LOS of "C" or better.

Figure 11: Bicycle and Pedestrian LOS on the State Highway System in Urban Areas in 2013



SOURCE: FDOT Multimodal Mobility Performance Measures Source Book

Vehicle Hours of Delay

SUPPORTING MEASURE

As shown in **Figure 12a**, vehicle hours of delay on the SHS and the SIS have generally been declining over the past decade. Delay is important because it equates to cost in time and money for individuals and businesses.

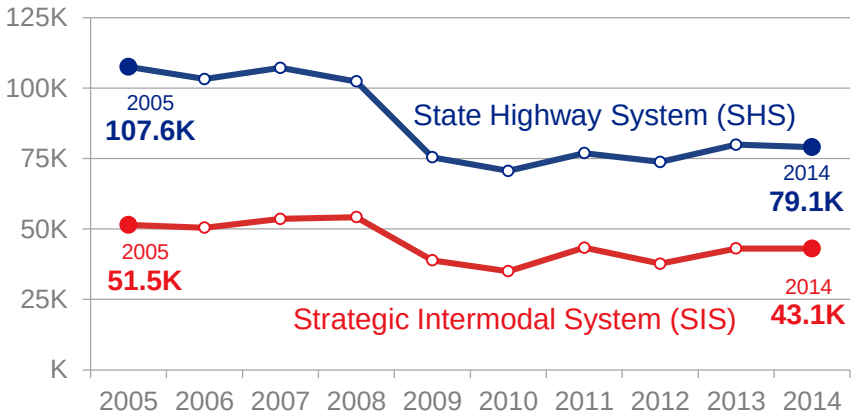
Delay is the difference between a relatively uncongested travel time (at a reasonable/safe speed, including effects of signals, other road conditions, and moderate traffic) and the estimated travel time (using estimated average speed for traffic and road conditions). By measuring delay on the state's roadways, insight can be gained into questions such as:

- How can transportation be improved to better serve people and commerce?
- What is the state getting from its investments in transportation (in terms of delay reduction)?
- Is the state investing in transportation as efficiently as possible?
- To what extent is delay or its reduction impacting economic activity?

Delay, however, should not be considered in isolation from other factors. Note, for example, the steep drop in delay between 2007 and 2012. This demonstrates that while delay reduction is desirable from a transportation operations perspective, that reduction is undesirable if it is due to an economic recession (which explains much of the drop during that period).

Vehicle hours of delay on the SHS and the SIS have generally been declining over the past decade. Reduction in delay translates into savings for companies and individuals.

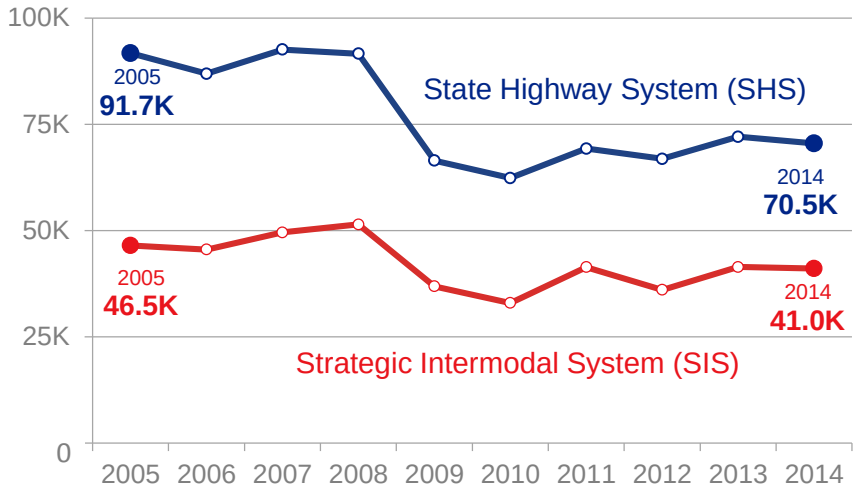
Figure 12a: Vehicle Hours of Delay During Peak Period



SOURCE: FDOT Multimodal Mobility Performance Measures Source Book

Since 2010, vehicle hours of delay in the seven most populous counties has increased (**Figure 12b**), indicative of the economic recovery and population growth. The hours of delay, however, are still well below the levels of the early 2000's. As such, Florida's transportation system appears to be accommodating the economic recovery with capacity for supporting further economic growth.

Figure 12b: Vehicle Hours of Delay During Peak Period — 7 Most Populous Counties



SOURCE: FDOT Multimodal Mobility Performance Measures Source Book

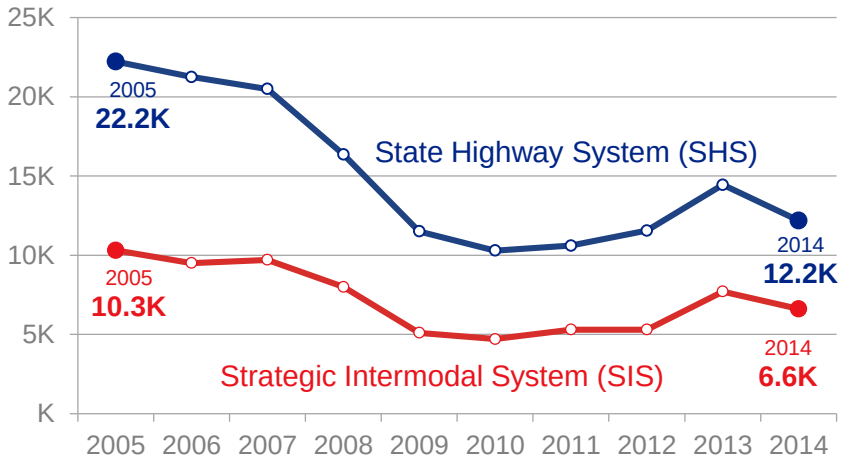
Combination Truck Hours of Delay

SUPPORTING MEASURE

Truck hours of delay have generally been trending downward on Florida roads over the past decade. This is particularly important for efficient goods movement where time does translate into money—additional cost to shippers, carriers, and consumers, or cost savings for each. For the SHS, the decrease in truck hours of delay has been particularly significant—see **Figure 13**. Truck hours of delay on the SIS also trended downward over the past decade but at a lesser rate than on the SHS. Although the highway component of the SIS is primarily a sub-set of the SHS, it accounts for 70 percent of the SHS's truck traffic.

Truck hours of delay have generally been trending downward on Florida roads over the past decade. There was a notable decrease between 2013 and 2014. This could reflect to some extent greater transportation system operating efficiency as vehicle miles of travel increased over the same period.

Figure 13: Combination Truck Hours of Delay



SOURCE: FDOT Multimodal Mobility Performance Measures Source Book

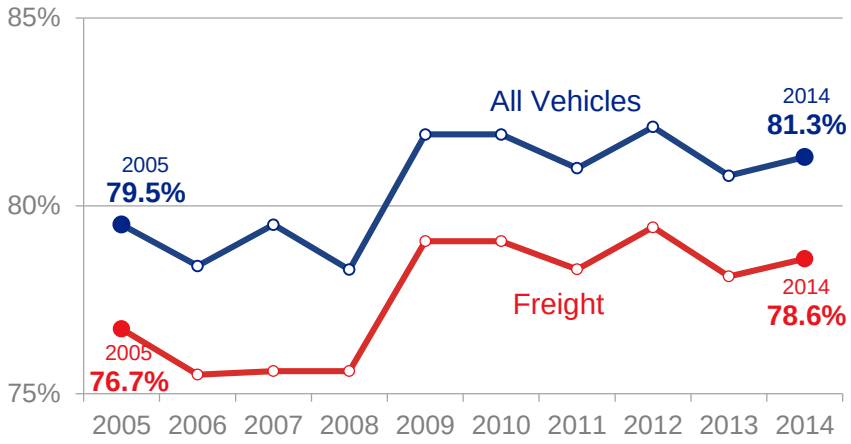
Travel Time Reliability

SUPPORTING MEASURE

Travel time reliability is especially important to transportation system users for the movement of people and freight. FDOT began tracking this measure for freeways in 2005 as shown in **Figure 14**. Travel time reliability is the percentage of travel occurring at the posted speed limit (or higher) on freeways. Travel time reliability on freeways during the peak period of travel improved from 79.5 to 81.9 percent and from 76.7 to 79.1 percent between 2005 and 2009 respectively for all vehicles and for freight. From 2009 through 2014 travel time reliability has been generally flat. This measure is particularly important, translating to time and cost savings for shippers and carriers that rely on the timely movement of finished goods and raw materials/commodities as trucks move approximately 83 percent of all Florida manufactured tonnage. Travel time reliability is a performance measure that can be used to promote economic development and investment.

Travel Time Reliability on freeways improved—translating to time and cost savings for shippers and carriers.

Figure 14: Travel Time Reliability on Freeways During Peak Period

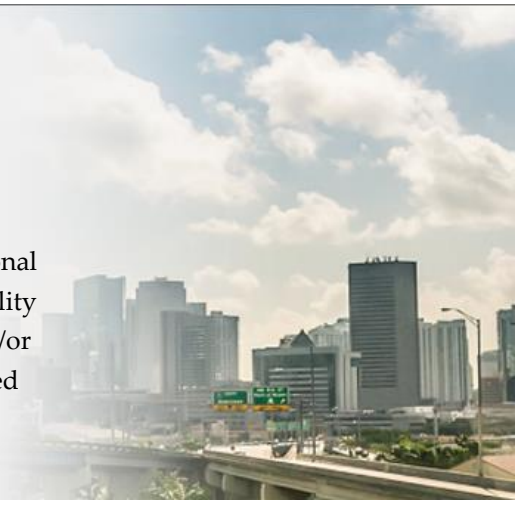


SOURCE: FDOT Multimodal Mobility Performance Measures Source Book

Florida develops a new tool for Travel Time Reliability

A new tool is being developed to identify travel-time reliability and safety deficiencies to predict the impact of proposed transportation improvements. This new tool is compatible with travel demand models used by Florida Metropolitan Planning Organizations (MPOs).

The new tool uses reliability and safety prediction procedures from the National Highway Safety Manual. Benefits are measured in terms of improved reliability and reduction in crash types (i.e., fatal, injury, property damage, bicycle, and/or pedestrian). As a result, MPOs can provide information to citizens and elected officials about the measurable benefits of scenarios that prioritize safety and reliability investments.



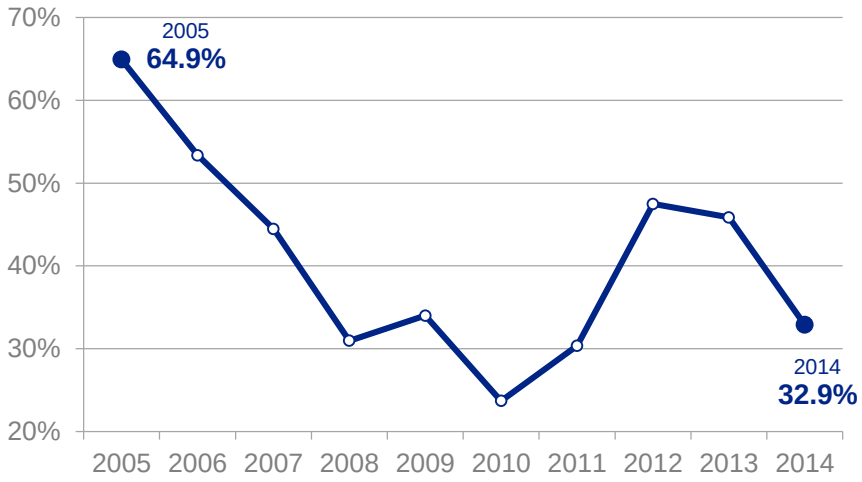
Rail Departure Reliability

SUPPORTING MEASURE

Rail departure reliability captures the average on-time performance of Amtrak. **Figure 15** shows that on-time departure performance for Amtrak decreased dramatically between 2005 and 2014. On-time performance is defined as a train departing the station within an acceptable margin of the published schedule. While FDOT does not have control over the performance associated with this measure, the public expects reliable departure times, and the extent to which they will make this mode choice relies considerably on this measure. **Figure 7** shows a decrease in Amtrak ridership, which to some extent may reflect consumer response to this level of reliability.

On-time departure performance for Amtrak decreased dramatically from 64.9 to 32.9 percent between 2005 and 2014.

Figure 15: Rail Departures On-Time



SOURCE: FDOT Multimodal Mobility Performance Measures Source Book

Amtrak service for North Florida

After a decade of suspended service, there have been discussions to restore service from New Orleans to Jacksonville to Orlando. Doing so would complete the transcontinental Sunset Limited route that already extends westward from New Orleans to Los Angeles.

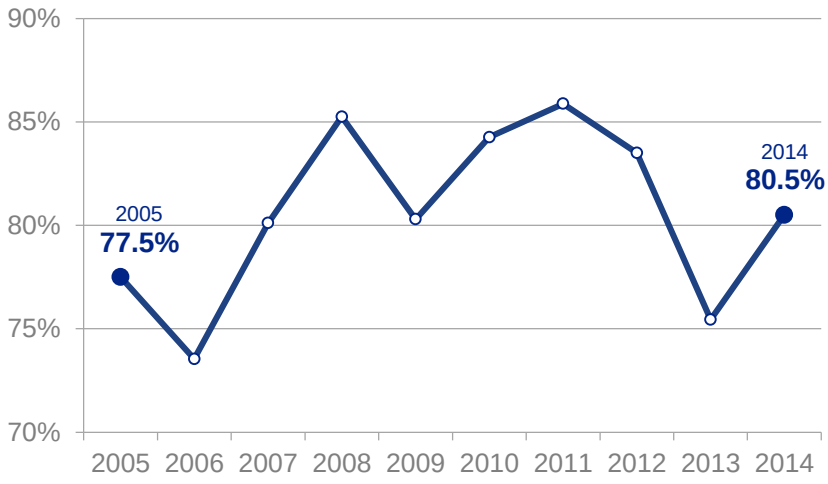
Airport Departure Reliability

SUPPORTING MEASURE

Florida airport users expect reliable travel with minimal delay. Departure reliability at Florida's commercial airports is defined as "on time" if a flight departs less than 15 minutes after the scheduled time in the airlines' Computerized Reservations Systems. As shown in **Figure 16**, this measure generally has been improving, although there has been considerable fluctuation over the past ten years. By 2011, on-time departures stood at 85.9 percent, while in 2013 it dipped down to 75.4 percent—the lowest percent since 2006. In 2014 on-time departures increased to 80.5 percent. Aviation is critical to Florida's economy. While FDOT does not have control over the performance associated with this measure, it recognizes that on-time aviation performance is important to the business community, residents and millions of visitors. Continued federal and state investment in expanding and modernizing airport infrastructure and technology (e.g., air traffic control modernization) will be key to the long term improvement in airport departure reliability.

Airport on time departures varies from year to year, but has generally improved since 2005.

Figure 16: Airport Departures On-Time



SOURCE: FDOT Multimodal Mobility Performance Measures Source Book

Transit Headways

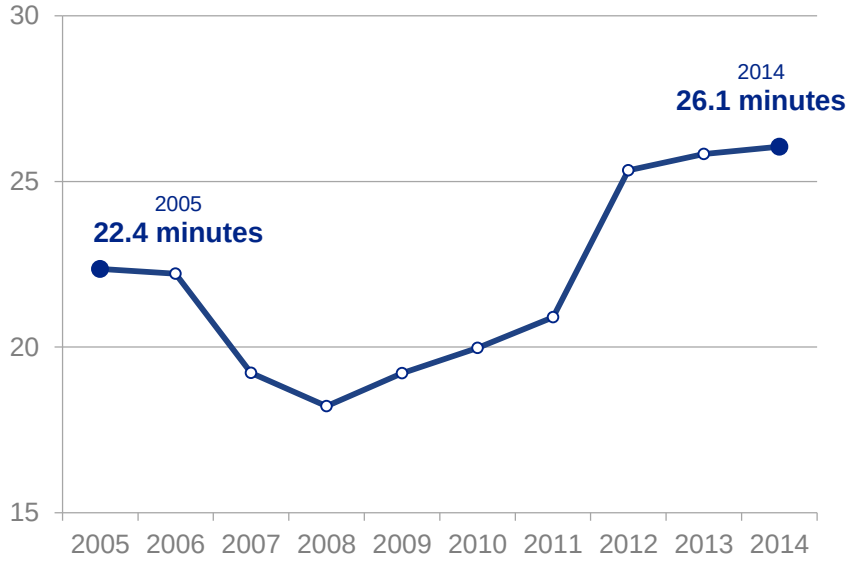
SUPPORTING MEASURE

Average transit headway is a performance measure of the average duration (or time) between transit vehicles arriving at a stop. The average headway is measured for the transit system as a whole using: directional route miles, revenue miles, revenue hours, and the number of vehicles operated in maximum service (peak vehicles). Anyone who has missed a bus is eager for the next bus to arrive, making short headways an important measure. Technology, such as transit signal priority, is helpful in reducing travel time for buses operating in congested traffic–even if headway time remains unchanged. Better transit performance also positively impacts other road users.

Public transportation's value is largely dependent upon service frequency. As shown in **Figure 17**, the estimated average headway for all transit systems in Florida has been increasing (i.e., worsening) since 2008.

The average headway for transit systems in Florida has been increasing (i.e., worsening) since 2008. The change over the past ten year period mirrors economic trends over the same period.

Figure 17: Average Transit Headways (minutes)



SOURCE: FDOT Multimodal Mobility Performance Measures Source Book

KEY STRATEGIES TO IMPROVE TRAVEL QUALITY

FDOT will help ensure that continued progress is made to improve its core measure of travel quality through these actions:

- Implement FDOT's Freight Mobility and Trade Plan.
- Continue to promote greater interaction among FDOT Districts, MPOs and Freight Stakeholders throughout the state as well as holding freight forums at key venues such as TRANSPLEX.
- Add capacity to existing SIS facilities to support growth and relieve congestion, consider new SIS facilities when needed to fill major gaps in connectivity, and/or increase efficiency through innovation and technology.
- Incorporate travel time reliability into the planning and programming processes to enable analysis and programming of operations improvements that improve travel time reliability.
- Continue Transportation System Management and Operations (TSM&O) initiatives to ensure that operations improvements are implemented in all FDOT processes.
- Implement FDOT's Complete Streets Policy to improve access and mobility for public transit riders, pedestrians, and bicyclists.

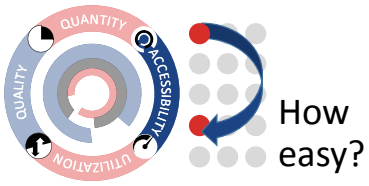
Go to http://transplex.org/ for information on the freight and logistics forum held at TRANSPLEX 2015.

Complete Streets Policy

The Complete Streets Policy incorporates context-appropriate roadway designs that accommodate users of all ages and abilities, including bicyclists, pedestrians, motorists, transit riders, and freight. FDOT recognizes that 21st Century demographics, travel preferences, business practices, and development patterns require a broad focus beyond just the automobile.

ACCESSIBILITY

CORE MEASURE



FDOT has identified a series of core measures and supporting measures related to transportation system mobility. Accessibility, as a core measure, deals with the ease in engaging in activities from a transportation standpoint. The supporting measures for accessibility are:

- Commute Times Less Than 30 Minutes
- Bicycle and Pedestrian Facilities
- Aviation, Rail, and Seaport Highway Adequacy

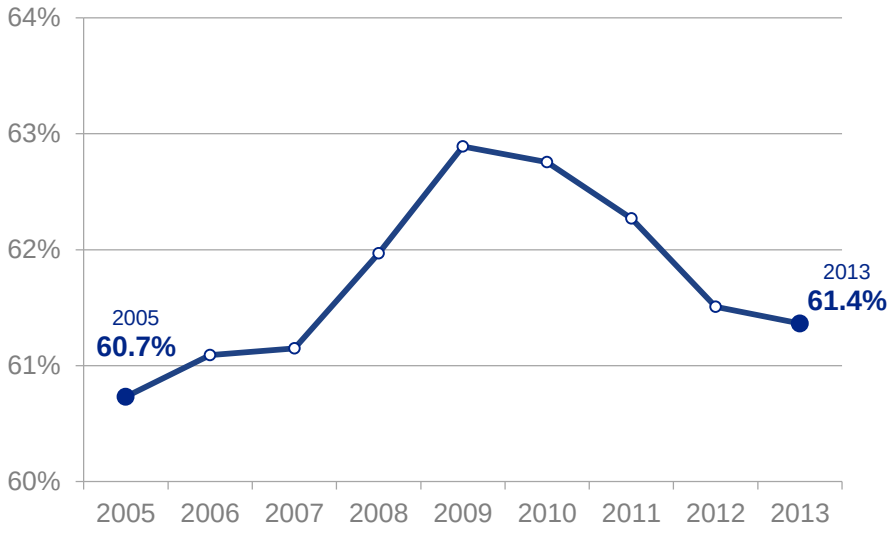
Commute Times Less Than 30 Minutes

SUPPORTING MEASURE

The decentralization of jobs and housing into the suburbs and beyond has led to increased travel commute times. As a result, when choosing a location, families and businesses must balance location against travel times to jobs, schools, shopping and recreational activities. **Figure 18** shows that worker commute times have both fallen and risen over the past ten years. The percentage of people with commute times less than 30 minutes increased from 60.7 percent in 2005 to 61.4 percent in 2013, which means more people had shorter commutes. Interestingly, as Florida (along with the nation as a whole) recovers from the economic recession, commute times have been increasing since 2010 (i.e., since commute times less than 30 minutes have decreased). From a demographic standpoint, both millennials and baby boomers (each a substantial population cohort) are showing a growing preference to working close to home.

The percentage of people with commute times less than 30 minutes increased from 60.7 percent in 2005 to 61.4 percent in 2013—more people had shorter commutes. As Florida recovers from the economic recession, commute times have begun to rise since 2010.

Figure 18: Commute Times Less Than 30 Minutes



SOURCE: FDOT Multimodal Mobility Performance Measures Source Book

Bicycle and Pedestrian Facilities

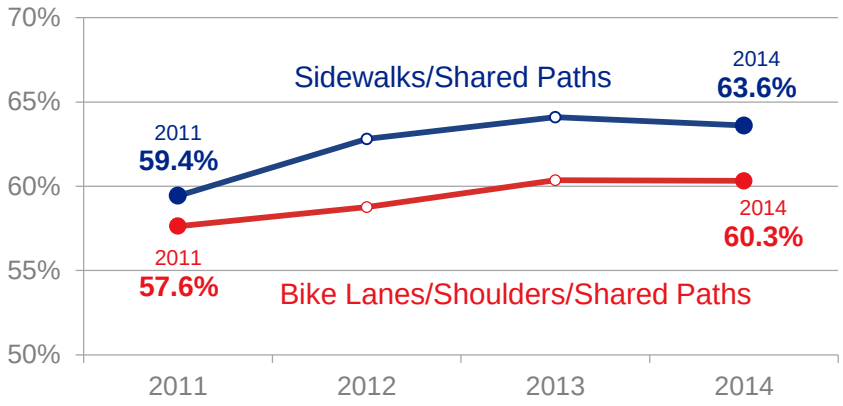
SUPPORTING MEASURE

Florida regions and communities place a premium on quality of life, including more transportation choices, and have incorporated improved bicycle and pedestrian facilities/networks as a part of their regional and community visions. The bicycle and pedestrian facilities measures demonstrate FDOT's commitment to non-motorized modes of transportation, including the role they play in providing access to transit and improving public health. **Figure 19** highlights the percentage of the SHS in urban areas with sidewalks, bike lanes, shoulders, or shared pathways on at least one side of the road[2].

- In 2011 FDOT began measuring the percent of sidewalk, bicycle lane, and shared pathway coverage on SHS facilities in urban areas.
- Between 2011 and 2014 sidewalks facilities increased from 59.4 percent to 63.6 percent on SHS roads in urban areas.
- Over the same period the percentage of bike lane, shoulders, and shared path coverage increased from 57.6 percent to 60.3 percent.

Between 2011 and 2014 sidewalk facilities increased from 59.4 to 63.6 percent, while bicycle facilities increased from 57.6 to 60.3 percent on the SHS in urban areas. This is substantial progress over a relatively short period of time.

Figure 19: Bicycle and Pedestrian Facility Coverage on the State Highway System in Urban Areas



SOURCE: FDOT Multimodal Mobility Performance Measures Source Book

[2] Shared pathways are included in both bicycle and pedestrian facility calculations.

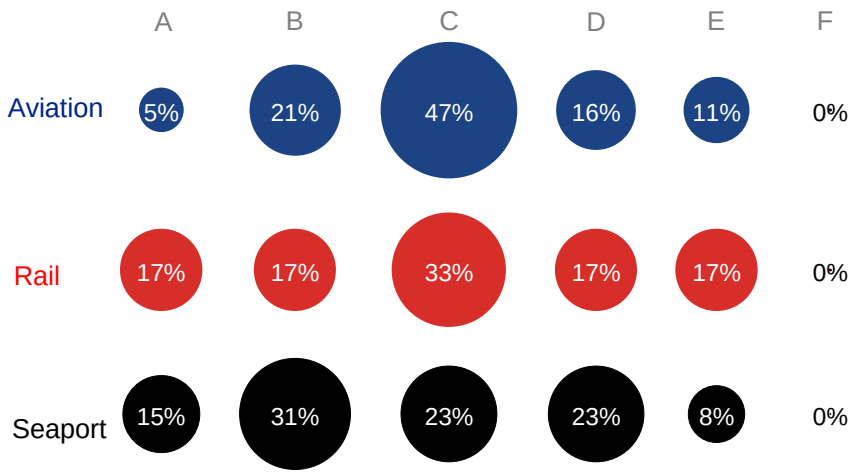
Aviation, Rail, and Seaport Highway Adequacy

SUPPORTING MEASURE

Intermodal connectivity is important to moving people and goods. This measure addresses the adequacy of highways that provide connections to SIS hubs including airports, rail terminals, and seaports for both passengers and freight. Level of service (LOS) planning software was used to calculate average highway speed, while highways were aggregated to calculate overall connector travel time and speed. This supporting measure covers LOS for those highways that provide connection to airports, rail terminals and seaports. As shown in **Figure 20**, the vast majority of SIS intermodal connectors are performing at an acceptable level of service. **Figure 20** highlights that 73 percent of aviation roadway connections had a LOS of "C" or better, 67 percent of rail roadway connections had a LOS of "C" or better, while 69 percent of seaport roadway connections had a LOS of "C" or better.

The vast majority of SIS intermodal connectors are performing at an acceptable level of service.

Figure 20: Aviation/Rail/Seaport Highway LOS Adequacy



SOURCE: FDOT Multimodal Mobility Performance Measures Source Book

KEY STRATEGIES TO IMPROVE ACCESSIBILITY

FDOT will help ensure that continued progress is made to improve its core measure of accessibility through these actions:

- Maximize the use of existing SIS facilities, including improving the efficiency of these facilities through the use of technology and operational decisions.
- Add capacity to existing SIS facilities where needed to support growth in demand and relieve congestion, or consider new SIS facilities when needed to fill major gaps in connectivity.
- Ensure connectivity between the SIS and regional and local transportation facilities to support complete end-to-end trips.
- Continue to look for ways to improve pedestrian and bicycling access as part of the implementation of FDOT's Complete Streets Policy.
- Identify freight bottlenecks and connection gaps through FDOT's ongoing freight planning and outreach to freight stakeholders.
- Coordinate with local governments to promote land use and development decisions that are consistent with and supportive of transportation infrastructure that provide citizens with transportation choices.

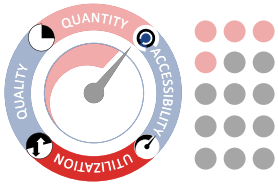
Managed Lanes and Express Lanes

Express lanes are a type of managed lane, consisting of lanes that are proactively managed by controlling access to adjust to actual travel demand. Express lanes improve travel time reliability for the traveling public in both toll and general use lanes.

The 95 Express lanes project in Broward and Miami-Dade counties combines tolling, transit, travel-demand management and technology to increase the people-moving capability of I-95. Included is a toll-free option for those who ride in registered carpools or van pools. Combined with Bus-Rapid Transit (BRT) service, the 95 Express lanes project is reducing the number of cars during peak periods, while improving travel reliability.

UTILIZATION

CORE MEASURE



FDOT has identified a series of core measures and supporting measures related to transportation system mobility. Utilization, as a core measure, describes how much of the transportation system is used and conversely what capacity or availability remains. This relates to user perceptions of the degree to which transportation facilities or services are congested. The supporting measures for utilization are:

- Miles Severely Congested
- Travel Severely Congested

Miles Severely Congested

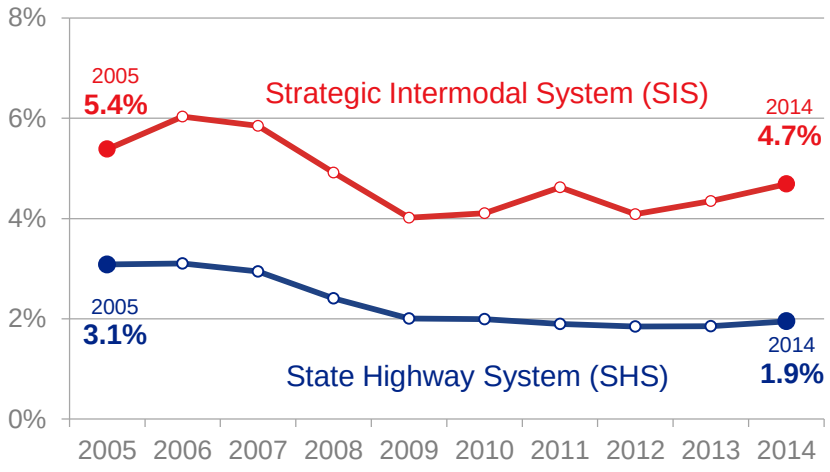
SUPPORTING MEASURE

Florida has experienced a notable reduction in the number of miles that are severely congested[3] during the peak period on the SHS and on the SIS as shown in **Figure 21**. This reduction began after 2006.

- 4.7 percent of SIS miles were severely congested during the peak period in 2014—this had been as high as 6.0 percent in 2006.
- By comparison, 1.9 percent of SHS miles were severely congested in 2014 as compared to 3.1 percent in 2005.

Florida has experienced a notable reduction in the number of miles that are severely congested during the peak period on the SIS and the SHS.

Figure 21: Miles of Severely Congested Roads During Peak Period



SOURCE: FDOT Multimodal Mobility Performance Measures Source Book

[3] Severe congestion is travel on roadways operating at a level-of-service (LOS) F.

Travel Severely Congested

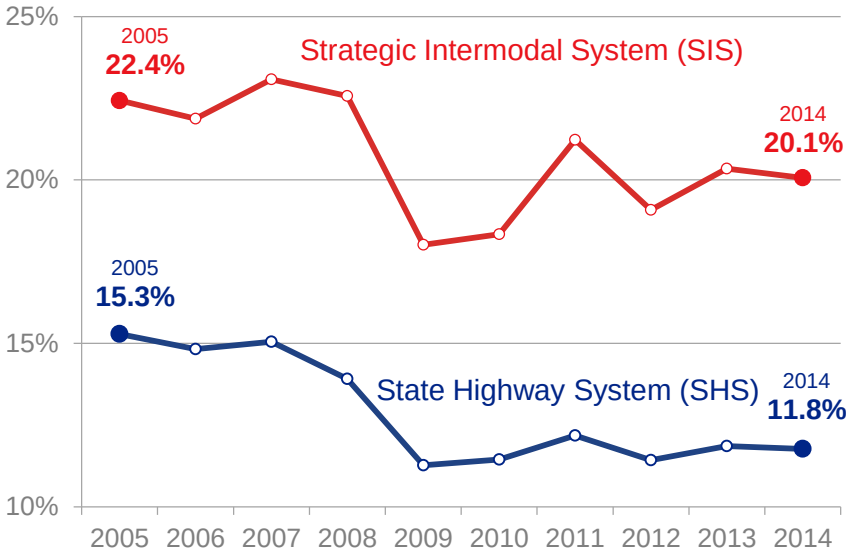
SUPPORTING MEASURE

Severe congestion on the SHS and the SIS in Florida's non-urbanized areas is negligible.

Florida has experienced a marked reduction in severe peak period travel congestion on the SHS and on the SIS as seen in **Figure 22**. Whereas the measure of miles severely congested is based on roadway mileage, travel severely congested is based on vehicle miles of travel (VMT). The reduction in travel severely congested began in 2008.

- In 2014, 11.8 percent of the SHS was severely congested during the peak period—this had been as high as 15.3 percent in 2005.
- By comparison, in 2014, 20.1 percent of SIS highway corridors were severely congested—this had been as high as 23.1 percent in 2007.
- Severe congestion on the SHS and on the SIS in Florida's non-urbanized areas is negligible, even during the peak period.

Figure 22: Travel on Severely Congested Roads During Peak Period



SOURCE: FDOT Multimodal Mobility Performance Measures Source Book

KEY STRATEGIES TO IMPROVE UTILIZATION

FDOT will help ensure that continued progress is made to improve its core measure of utilization through these actions:

- Identify and invest in "first-mile" and "last-mile projects" (e.g., improvements such as turn lanes and intersection geometry to improve truck movements, enhanced pedestrian connections to transit stations, etc.).
- Implement managed lanes to manage congestion.
- Coordinate with local governments to promote land uses and development that are consistent with and supportive of transportation infrastructure and more transportation choices.
- Continue to advance intelligent transportation systems (ITS) and access management investments that improve system performance.
- Maximize the use of existing SIS facilities, including improving the efficiency of these facilities through the use of technology and operational decisions.
- Focus on new and emerging technologies that have potential for improving transportation operating efficiency.
- Promote and/or support efforts of MPOs and others that encourage ride sharing, expanded transit use, flexible work times, and telecommuting.

Additional Mobility Performance Measures

The Multimodal Mobility Performance Measures (MMPM) Program measures and reports on transportation system performance to enable a better understanding of how to improve mobility. Florida leads the nation in developing mobility performance measures that can be used in statewide and metropolitan transportation planning to identify the location, scale, and the nature of transportation problems to help identify possible solutions.

More information can be found at floridampms.com.

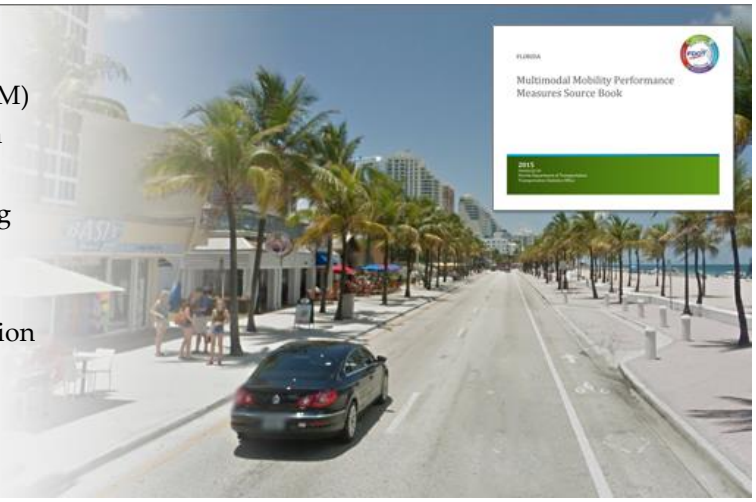


Figure 23: Multimodal Mobility Performance Measures Matrix

	MODE	QUANTITY	QUALITY	ACCESSIBILITY	UTILIZATION
PEOPLE	Auto/Truck	Vehicle Miles Traveled Person Miles Traveled	% Travel Meeting LOS Criteria % Miles Meeting LOS Criteria Travel Time Reliability Travel Time Variability Vehicle Hours of Delay Person Hours of Delay Average Travel Speed	Time Spent Commuting	% Miles Severely Congested % Travel Severely Congested Hours Severely Congested Vehicles Per Lane Mile
	Transit	Passenger Miles Traveled Passenger Trips	Average Headway		
	Pedestrian		Level of Service (LOS)	% Sidewalk Coverage	
	Bicycle		Level of Service (LOS)	% Bike Lane/Shoulder Coverage	
	Aviation	Passengers	Departure Reliability	Highway Adequacy (LOS)	Demand to Capacity Ratios
	Rail	Passengers	Departure Reliability	Highway Adequacy (LOS)	
	Seaports	Passengers		Highway Adequacy (LOS)	
FREIGHT	Truck	Combination Truck Miles Traveled Truck Miles Traveled Combination Truck Tonnage Combination Truck Ton Miles Traveled Value of Freight	Travel Time Reliability Travel Time Variability Combination Truck Hours of Delay Combination Truck Average Travel Speed		% Miles Severely Congested Vehicles Per Lane Mile Combination Truck Backhaul Tonnage
	Aviation	Tonnage Value of Freight		Highway Adequacy (LOS)	
	Rail	Tonnage Value of Freight		Highway Adequacy (LOS) Active Rail Access	
	Seaports	Tonnage Twenty-Foot Equivalent Units Value of Freight		Highway Adequacy (LOS) Active Rail Access	

FOR THE FUTURE

FDOT strives to be forward thinking in regards to performance measurement. Many measures can be valuably used year after year. But DOTs and the states they serve continue to both lead change and adapt to change. This year we are introducing a section in each performance chapter that identifies potential measurement considerations for the future.

Person Miles Traveled

There is an opportunity to further focus on people movement instead of vehicles and to factor in telecommuting and key aspects of travel.

Express Lanes

Express Lanes are becoming a key mobility strategy for FDOT and are a benefit to our customers. Performance measurement will be valuable in assessing their effectiveness in managing congestion, supporting express bus service, etc.

Complete Streets

The broad-based interest in Complete Streets provides an opportunity to explore measures that reflect the benefits of this strategic direction and the importance of context sensitive implementation.

Transit Accessibility Measure

Dimensions such as distance to jobs and access to jobs tell an important story related to access to jobs by transit.

Transportation Choice

One key focus in implementing the new Florida Transportation Plan will be on providing more transportation choices, with millennials and seniors in particular, placing a premium on transportation options.

Congestion and VMT Comparison / Compare the Two Over Time

Congestion and Vehicle Miles of Travel are key measures on their own and even more useful in combination to get a more complete picture of travel trends in relation to congestion trends.

Future Corridors and Strategic Intermodal System (SIS)

Florida continues to grow, and as it does we plan for Future Corridors as well as ensuring the SIS can serve its interregional and statewide mobility functions. This will necessitate the need for meaningful multi-dimensional measures.

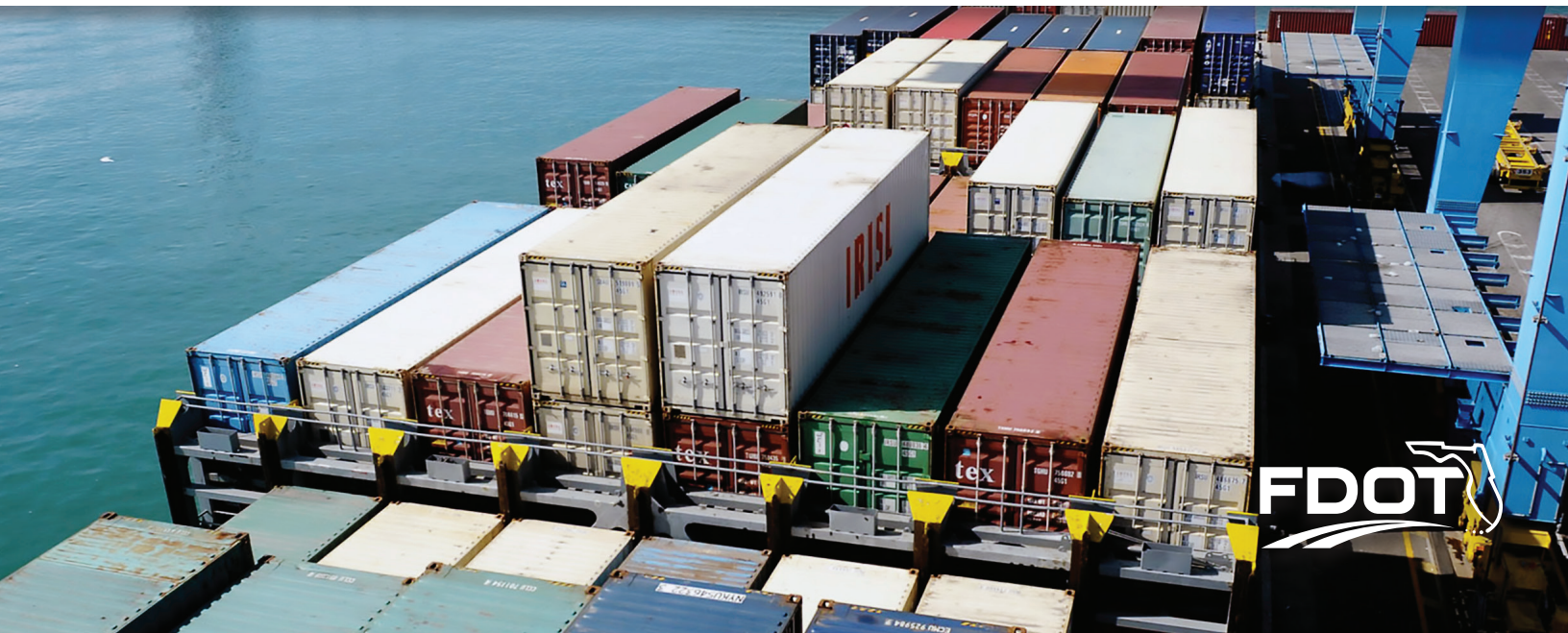
Arterial Roadway Reliability

FDOT is developing reliability measures specific to arterial roadways.

Florida Department of Transportation 2015 Performance Report

Economy

Economic Competitiveness and Growth



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ECONOMY

This report is part of the Performance-Based Planning and Programming Process used by the Florida Department of Transportation (FDOT). For a description of that process, updates to this report and other transportation performance reporting initiatives of FDOT, go to FDOTPerforms.org.

INTRODUCTION

Florida's economy reflects evolving local and regional economies that continuously adapt to a dynamic global economy. Because transportation supports economic competiveness, FDOT strives to adapt in meeting the mobility and access needs of our businesses, citizens, and visitors. Investments in Florida's transportation assets are investments in the backbone of the state's economy. As travel demand increases and changes, Florida continues to improve the planning and management of our multimodal transportation system.

Vibrant economies, like Florida's, rely on vibrant transportation systems to satisfy user needs. Our road and bridge network is key to moving people and goods on a daily basis. Public transportation provides essential mobility for many as well as a transportation choice that strengthens our communities and regions. Our aviation facilities align with an economy that functions in real time to rapidly move both people and goods—domestically and across the globe. And our seaports and spaceports are a strategic cornerstone to Florida's place in a global economy. Freight movement—using all modes—has become an increasingly important factor in a fiercely competitive economy that is logistics driven. Providing facilities for walking and bicycling also bolsters community mobility, vibrancy, and health—strengthening local economies. Diversity is another strength of Florida's transportation system. Our Strategic Intermodal System (SIS) for example, is designed to provide connectivity across modes and facilitate the speed of longer distance travel for people and goods. Conversely, our non-SIS transportation facilities serve many vital transportation roles while meshing with the values, priorities, and aspirations of our communities.

FDOT's core measures of economic competiveness include the return on investment (ROI) of transportation improvements (the level of benefit for every dollar spent) and the degree to which construction projects get completed on-time and on-budget.

2015 PERFORMANCE HIGHLIGHTS

Supporting economic competitiveness is a strategic FDOT priority. Key performance highlights are:

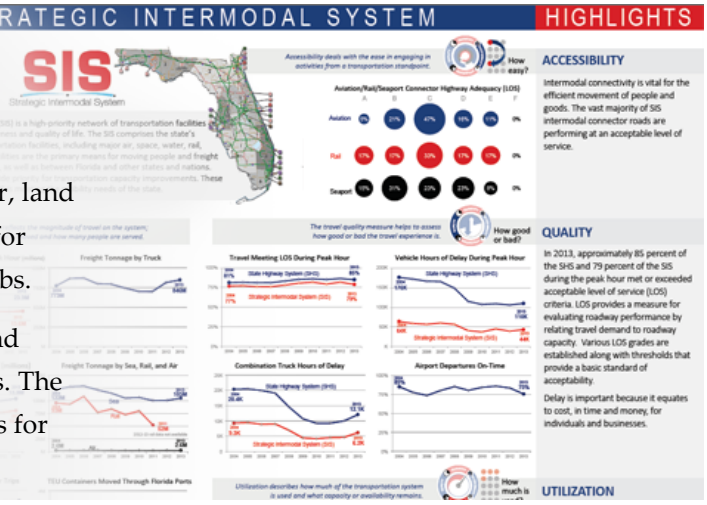
- The impact of transportation investments is a robust $4.40 in economic benefits for every dollar spent—in addition to direct construction employment, transportation improvements support thousands of long-term jobs.
- Florida exports have increased over 77 percent since 2005.
- Florida had a larger share of U.S. trade in 2014 than in 2006, which is a significant factor in fueling growth, supporting jobs, and diversifying the state's economy. Transportation underpins trade.
- Florida's total value of freight began to decline prior to the national recession, then began rebounding in 2011—and remains slightly lower than 2005 levels.
- Over 87 percent of FDOT's construction projects in 2015 were completed on-time, avoiding any delay of the associated economic benefits.
- Over 91 percent of FDOT's construction projects in 2015 were completed within budget, which allows more project investments to be made along with the associated economic benefits.

Performance Profiles are included to highlight specific strategies and programs that support these performance measures.

SIS Highlights Report

The value of Florida's imports and exports has increased significantly since the designation of the SIS in 2003. FDOT is making SIS investments that reflect the evolution of air, water, land and space transportation to accommodate new technologies for moving people and cargo, and related changes in types of hubs.

The SIS continues to help FDOT focus significant attention and resources on the state's most strategic transportation facilities. The SIS Highlights Report summarizes the Performance Measures for the SIS.



ECONOMY

FDOT has identified a series of core and supporting measures related to the economic competiveness of Florida's transportation system. Economy, as a broad measure, encompasses several non-transportation (context-based) measures that impact transportation and that transportation impacts, such as Florida's share of U.S. trade. FDOT also uses several transportation specific measures that demonstrate our contribution to economic well-being. FDOT and other transportation system operators primarily support economic competitiveness by providing access, mobility, and travel options. Below are the core measures and supporting measures that support Florida's economic competiveness:

Core Measures

- Return on Investment (ROI)
- Projects Completed On-Time
- Projects Completed Within Budget

Supporting Measures

- Capacity Funds for the SIS
- Florida-Originating Exports
- Florida Share of U.S. Trade
- Florida Value of Freight
- Jobs by Transportation-Intensive Sector

Florida's Economy Depends on Transportation Excellence

Florida's economy is the 4th largest in the United States. If Florida were a country, its economy would rank as the 19th largest. Florida's infrastructure, talent, and business-friendly tax policies are consistently recognized among the nation's best and have attracted many nationally ranked companies. Florida is also a global leader in international trade and foreign investment, and is home to the 2nd largest Free Trade Zone in the nation. And yes, Florida is still a tourism powerhouse, attracting 98.9 million visitors in 2014 who spent $82 billion. Transportation keeps this vast activity moving.

RETURN ON INVESTMENT

CORE MEASURE

FDOT's macroeconomic model estimates the long-term economic benefits associated with the capital projects in FDOT's Work Program. The model quantifies the benefits of investments in highway, transit, seaport and rail projects. These benefits translate into cost and time savings for Florida's businesses, workers and consumers.

For every $1 invested through FDOT's Work Program, $4.40 in economic benefits are generated (**Figure 1**). FDOT is also improving its ability to estimate return on investment for individual transportation projects. This will provide useful information for FDOT's Executive management and other decision makers throughout Florida.

Every $1 invested through FDOT's Work Program generates $4.40 in economic benefits.

Figure 1: Benefit-Cost Summary of FDOT Work Program (in present value)

BENEFITS	
Personal Income Benefits	$76.00
Non-Business User Benefits	$65.70
Total Benefits	$141.70
COSTS	
Total Costs	$32.10
Benefit-Cost Ratio	**$4.40**

SOURCE: Florida Department of Transportation; Macroeconomic Analysis of Florida's Transportation Investments (January 2015)

Corridor and Project Level Analysis

Which transportation improvements generate the greatest return on investment? How do you compare the relative benefits and costs of multiple project alternatives? FDOT's various economic tools facilitate the right type of analysis, depending on the size and complexity of the project, its stage in the planning process, the extent to which data is available, and which related engineering, environmental, safety and other analyses have already been performed.

Capacity Funds for the SIS

SUPPORTING MEASURE

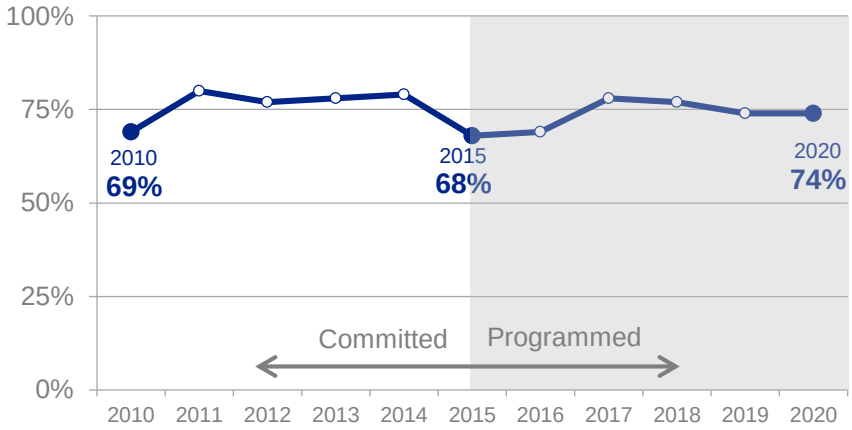
The Strategic Intermodal System (SIS) is Florida's primary network focus for ensuring a strong link between transportation and economic competitiveness. The SIS is a statewide network of high-priority transportation facilities, including the largest and most significant commercial service airports, spaceports, deep-water seaports, freight rail terminals, passenger rail and intercity bus terminals, rail corridors, urban-fixed guideway transit corridors, waterways and high-volume highways.

SIS facilities carry more than 99 percent of all commercial air passengers and cargo, virtually all waterborne freight and cruise passengers, all rail freight, and 89 percent of all interregional passengers. The SIS also accounts for more than 73 percent of Florida truck traffic and 56 percent of total traffic on the State Highway System. SIS improvements also receive extensive private and local investment—indicative of the importance of these facilities to communities and business.

State statute (s. 339.135) directs FDOT to allocate at least 50 percent of new discretionary highway capacity funds to the SIS. In addition, FDOT has set a target to allocate up to 75 percent of new discretionary capacity funds to the SIS. **Figure 2** shows that this policy assists the state in committing up to 75 percent of all capacity funds to the SIS from year to year.

Of the $12.7 billion of SIS capacity funding in FDOT's Work Program covering fiscal years 2016 to 2020, $11.4 billion has been programmed for highway improvements, $490 million for aviation and spaceports, $277 million for seaports, $264 million for rail, $149 million for intermodal projects, and $110 million for Transit New Starts.

Figure 2: SIS Capacity Funds as a Percent of Total Capacity Funds – Fiscal Years 2010 to 2020



SOURCE: Florida Department of Transportation, Office of Policy Planning

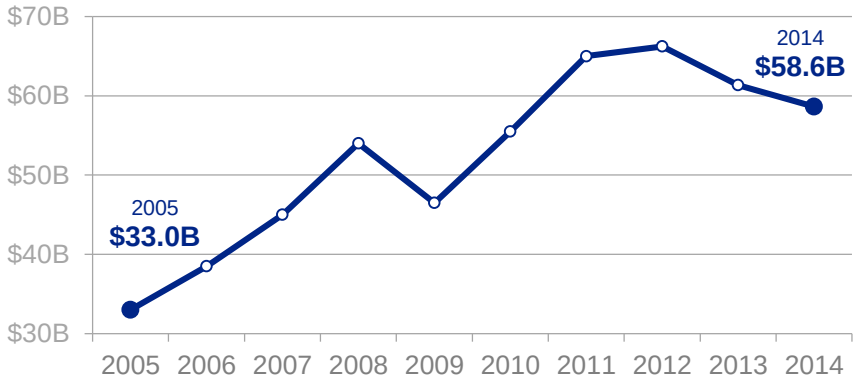
Florida-Originating Exports

SUPPORTING MEASURE

There has been a major increase in Florida exports—over 77 percent growth since 2005—moved by Florida's transportation system.

Figure 3 shows that there was a major increase in exports from Florida between 2005 and 2014 from $33 to $58.6 billion. This trend underscores the importance of the state's surface transportation system connecting goods with seaports, airports, rail corridors, and the Interstate Highway System. Continued growth in exports and the jobs associated with them relies on a good, reliable transportation system.

Figure 3: Florida-Originating Exports



SOURCE: Florida International Business Highlights: Merchandise Trade, Florida-Origin Exports, Foreign Investments

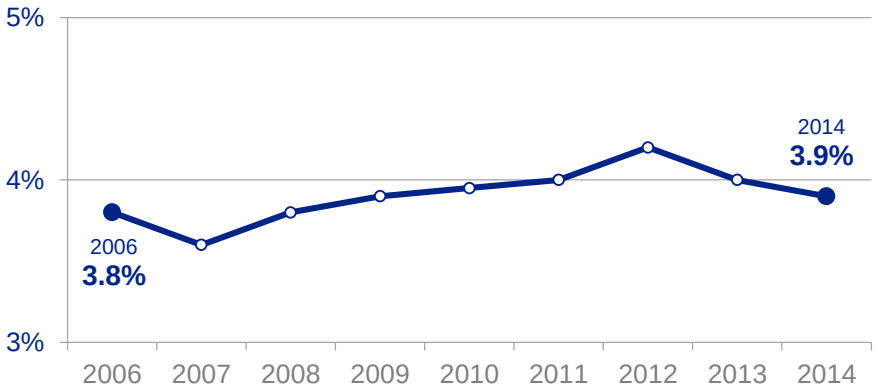
Florida Share of US Trade Flow

SUPPORTING MEASURE

Florida has a larger share of U.S. trade now than it did in 2006, which is significant given the size of the U.S. economy.

International trade and foreign investment makes up approximately one-sixth of Florida's economic output. They play a fundamental role in Florida's economy by fueling growth, supporting jobs, and diversifying the economic infrastructure. **Figure 4** shows that Florida's overall share of U.S. trade grew every year between 2007 through 2012, but has returned to its 2009 level. Despite the recent leveling off, Florida has a larger share of U.S. trade now than it did in 2006, which is significant given the size of the U.S. economy.

Figure 4: Florida Share of U.S. Trade



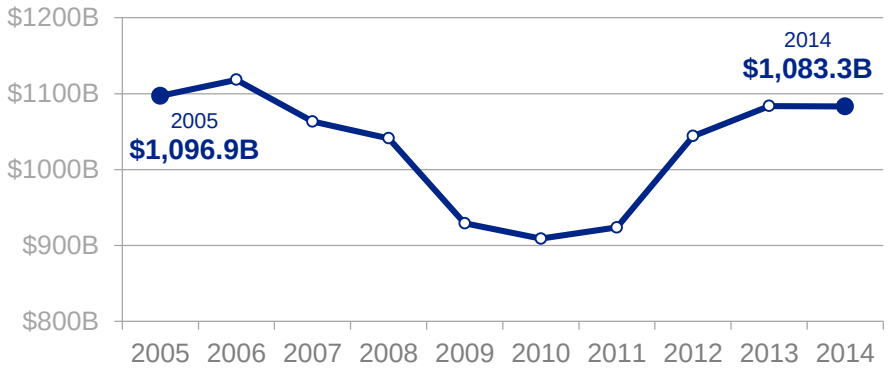
SOURCE: Florida International Business Highlights: Merchandise Trade, Florida-Origin Exports, Foreign Investments

Total Value of Freight

SUPPORTING MEASURE

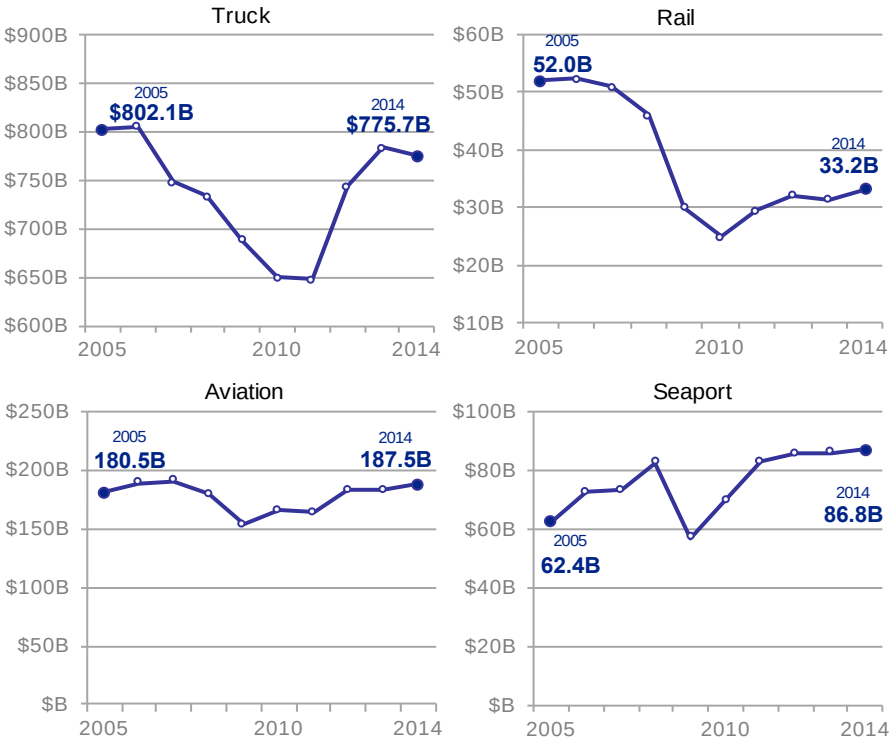
Figure 5a shows the total value of Florida freight movement. The "U" shaped trend reflects Florida's sharp rebound from the prolonged national recession. As importantly, this figure dramatically depicts the massive economic value of Florida freight. This is why FDOT has placed strategic importance on goods movement. **Figure 5b** breaks the economic value out by mode with most of the economic value associated with truck movement over Florida's highways. The increase in the value of goods that flow through seaports over the period is notable and affirms Florida's investments in these international connections.

Figure 5a: Florida Value of Freight



SOURCE: FDOT Multimodal Mobility Performance Measures Source Book

Figure 5b: Florida Value of Freight by Mode



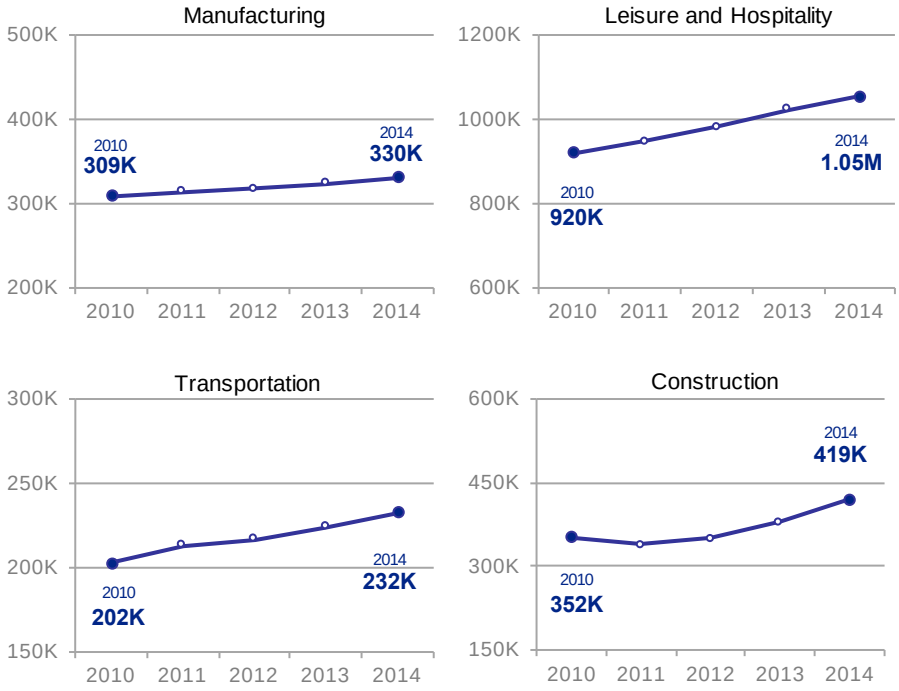
SOURCE: FDOT Multimodal Mobility Performance Measures Source Book

Jobs by Transportation-Intensive Sectors

SUPPORTING MEASURE

Figure 6 shows job growth in four sectors that are highly dependent on access and mobility to support Florida's long-term growth. FDOT and others need to pay attention to the transportation needs of these and other economic sectors. This, in turn, has implications for transportation demand and access. All four sectors shown are experiencing healthy growth and provide jobs to many Floridians. Florida's steady growth in manufacturing employment is both notable and encouraging. Construction has also seen a sharp increase (19 percent) in jobs since 2010.

Figure 6: Jobs by Transportation-Intensive Sector



SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Current Employment Statistics Program. PREPARED BY: Florida Department of Economic Opportunity, Bureau of Labor Market Statistics. NOTE: September numbers used for each year

CONSTRUCTION PROJECTS COMPLETED ON-TIME

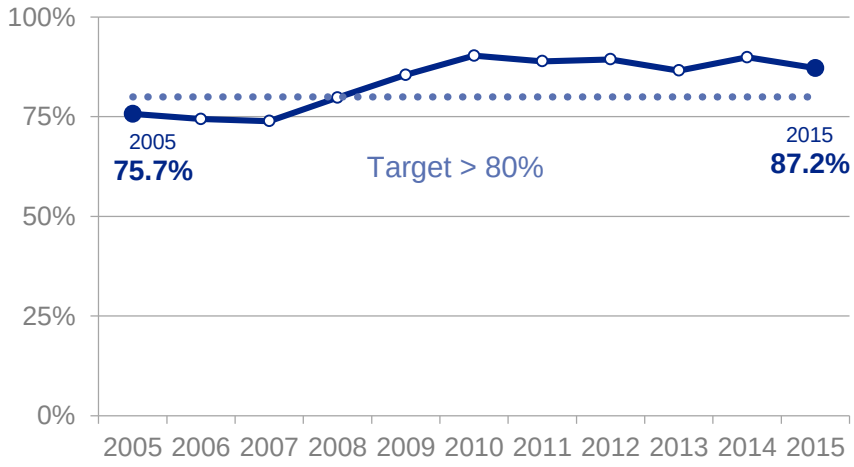
CORE MEASURE

This core measure reflects the percent of highway and bridge construction contracts completed by FDOT within 20 percent of the original contract schedule. **Figure 7** shows that of the 376 construction contracts completed in 2015, 87.2 percent were completed within 20 percent of the original contract time, which surpassed FDOT's 80 percent target.

FDOT supports the economy by completing projects on time, which saves time and money for freight shippers and the industries that depend on them, as well as for passenger transportation. It also helps reduce the length of time delays related to construction work zones. FDOT strives to pay close attention to our customers in this area of importance to them. The eleven year improvement trend is especially noteworthy.

Over 87 percent of FDOT's construction projects in 2015 were completed on-time.

Figure 7: Construction Projects Completed On-Time



SOURCE: Florida Department of Transportation, Office of Work Program and Budget

AASHTO *Grand Prize*: Port Miami Tunnel

FDOT's $666 million Port Miami Tunnel was constructed as a public-private partnership. The project involved successfully constructing the largest soft ground bored road tunnel in North America, decreasing traffic congestion in downtown Miami by providing a direct link between Port Miami and the Interstate Highway System, supporting freight and regional commerce.

CONSTRUCTION PROJECTS COMPLETED WITHIN BUDGET

CORE MEASURE

More than 91 percent of FDOT's construction projects in 2015 were completed within budget, exceeding the department's ambitious target.

This core measure is the percent of construction contracts completed by FDOT at a cost within 10 percent above the original contract amount. **Figure 8** shows that of the 376 construction contracts completed in 2015, 91.2 percent were completed within 10 percent of the original contract amount, exceeding FDOT's 90 percent target. The ability to complete projects within budget helps to ensure that FDOT can deliver more transportation projects overall, getting a greater "bang" out of every transportation dollar expended.

Figure 8: Construction Projects Completed within Budget

SOURCE: Florida Department of Transportation, Office of Work Program and Budget

AASHTO *People's Choice Award*: I-595 Corridor Improvements

FDOT's $1.22 billion I-595 Corridor project relieved congestion and created a multimodal transportation network along I-595 in Southeast Florida. Through a public-private partnership, design and construction teams completed the project on time and $275 million below the original cost estimate.

KEY STRATEGIES TO IMPROVE FLORIDA'S ECONOMY

FDOT will help ensure continued progress to improve its core measures associated with supporting the economy through strategies such as those listed below:

- Support the development of Florida as a major international trade hub with targeted investments in the capacity of and connectivity among Strategic Intermodal System (SIS) hubs and corridors.
- Develop and streamline mechanisms for expedited funding and implementation of projects that meet economic growth criteria.
- Include economic development opportunities in setting priorities for transportation investment on the SIS and regionally significant transportation facilities.
- Enhance and refine methods for integrating engineering, environmental, safety and economic analyses that encompass community livability/quality of life/attractiveness to generate better estimates of return on investment (ROI) for major projects. Provide technical assistance to transportation partners seeking to enhance and expand their use of economic analysis to improve their own decision making processes.
- Provide options for raising sustainable local, regional, and state transportation resources and investing those resources in projects that have the greatest need and benefit.
- Promote funding flexibility to respond quickly to economic opportunities—particularly for industries that are transportation dependent.
- Identify transportation needs, revenues, and shortfalls across all modes — maintain this information and communicate it broadly to foster a greater understanding of transportation challenges and needs.
- Maximize the return of federal transportation funds to Florida and the flexibility to use those funds consistent with state, regional, and local priorities.
- Improve the efficiency and connectivity of the supply chain serving Florida's businesses.

FOR THE FUTURE

FDOT strives to be forward thinking in regards to performance measurement. Many measures can be valuably used year after year. But DOTs and the states they serve continue to both lead change and adapt to change. This year we are introducing a section in each performance chapter that identifies potential measurement considerations for the future.

Expanding Customer Focus

FDOT surveys customers on a regular basis—there may be opportunities for greater incorporation of customer feedback as part of performance reporting – an example would be how our customers view transportation construction. Social media may play a larger role in this area over time.

Florida Business Climate Survey

Because of the importance of transportation to the economy, enhancements to this important survey could be an invaluable source of contextual data–of note, the survey currently includes business climate information related to transportation workforce skills and also on public agency permitting.

Florida Transportation Plan Update

The new Florida Transportation Plan (FTP) will provide an opportunity to incorporate new or adjusted performance measures reflecting the Plan's goals and objectives—Florida's millions of visitors each year, for example, have been a focus of Plan development, having a major impact on travel demand, mobility, and access.

Further Refinements to Economic Analysis Tools

FDOT is striving to improve its benefit/cost methodologies. As it does, related performance measures may become even more robust and useful.

Use Economic Modeling to Better Determine FDOT's Role

Many performance measures are affected by the course of the overall U.S. economy, global trends and other factors beyond FDOT's control. By modeling performance measures through economic analyses, FDOT can get a better idea of which changes are the result of large scale trends and those that are more likely to be the result of specific FDOT programs, policies and projects.

Moving People/Improving Connections

The concept of "people moved" as an economic indicator is worth considering, particularly as the public perceives mobility strongly in terms of travel time/efficiency and increasingly choice-based. Potentially this could be incorporated into an enhanced benefit/cost methodology.

Florida Department of Transportation 2015 Performance Report

Environment

Stewardship, Energy and Quality Places

ENVIRONMENT

This report is part of the Performance-Based Planning and Programming Process used by the Florida Department of Transportation (FDOT). For a description of that process, updates to this report and other transportation performance reporting initiatives of FDOT, go to FDOTPerforms.org.

INTRODUCTION

For maximum effectiveness, transportation should be integrated with land use, development, and environmental stewardship. Transportation decisions should be made with attention to enriching quality of life while ensuring responsible consideration of the natural, physical, and human environment. Quality of life is a highly important component of the broader umbrella of this environment performance report.

The Florida Department of Transportation's (FDOT) decision-making process uses various data and analytical tools to evaluate the environmental effects of transportation project alternatives. FDOT's environmental review process considers the physical, social, cultural, natural, and human issues associated with each transportation project. This results in avoided or mitigated impacts, public input, and ultimately project advancement with environmental permits.

2015 PERFORMANCE HIGHLIGHTS

FDOT delivers transportation capital investments through its Work Program as a steward of Florida's many environmental and community assets. Key performance highlights are:

- Between 2002 and 2014, air quality in Florida continued to improve. Maximum concentrations, measured by the statewide air monitoring network, of carbon monoxide (CO) decreased by 57 percent, nitrogen oxides (NO and NO_2) by 57 percent, volatile organic compounds (VOC) by 46 percent, and fine particulate matter (PM_{10} and $PM_{2.5}$) by 25 and 49 percent respectively.
- Between 2003 and 2015, 648 transportation projects were screened using the Efficient Transportation Decision Making (ETDM) process to identify and evaluate potential environmental impacts.
- By 2015, FDOT had 1,061 alternative fuel vehicles in its light passenger vehicle fleet. Ten years earlier FDOT's fleet had only 335 alternative fuel vehicles. This three-fold increase translates into fuel savings and improved air quality.

- Through 2014, FDOT had installed 515 noise barriers with an equivalent mileage length of 165 miles. This is a significant financial investment in noise mitigation and community quality of life.
- Six of Florida's 26 Scenic Highways (1,549 miles), have been designated National Scenic Byways and one (the Florida Keys Scenic Highway) has been awarded the special All-American Road designation. In 2004, Florida had 485 miles of designated Scenic Highways—the three-fold increase by 2015 underscores the state's exceptional natural beauty.
- Over the past 15 years, Florida advanced more than 1,700 transportation alternative / transportation enhancement projects such as trails, bicycle, and pedestrian facilities.
- In 2014, nearly 30 million trips were provided to transportation disadvantaged persons across Florida. These trips provide vital access to medical services, employment, and education. They also provide access to job training, day care facilities, and nutritional and other life sustaining activities.
- According to the Aging Road User Survey, more aging road users are aware of the Safe Mobility for Life Coalition (11 percent in 2013—most recent data available—as compared to 10 percent in 2012). Fifteen percent of survey respondents are preparing for when they can no longer safely drive.

Performance Profiles are included to highlight specific strategies and programs that support these performance measures.

WEKIVA PARKWAY
Completing Central Florida's Beltway

As a shining example of transportation planning in an environmentally sensitive area, the construction of the Wekiva Parkway includes the protection of more than 3,400 acres of land for conservation. When completed, the parkway will include numerous wildlife bridges, with the road being largely elevated to reduce accidents between vehicles and wildlife, while also preserving historic water flows. This $1.6 billion beltway in Central Florida is using innovative engineering to lessen the transportation impact on the surrounding environmental features.

AIR QUALITY

CORE MEASURE

FDOT has a long-standing commitment to maintaining air quality attainment levels, a core measure related to promoting quality of life and environmental stewardship, which is a primary goal of FDOT.

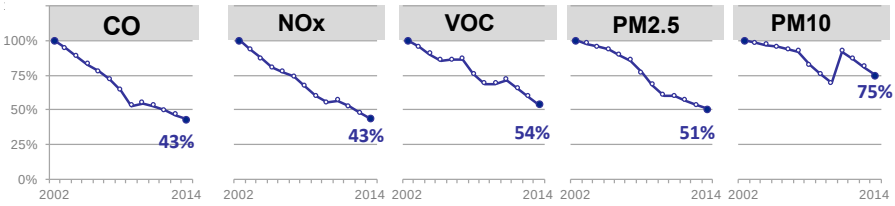
How we move people and goods impacts air quality. Fortunately, vehicles are now far less polluting. Technology has also helped to reduce transportation-related air pollution. Public transit, bicycle/pedestrian transportation, intermodal freight movement, transportation system demand management, and congestion reduction also help to sustain air quality. FDOT is committed to doing what it can within the span of its responsibilities to ensure clean air.

Motor vehicle pollutant emissions from the combustion of fuel have long been tied to air quality. The primary air pollutants associated with motor vehicles are carbon monoxide (CO), nitrogen oxides (NO_X), and volatile organic compounds (VOC), and to a lesser degree particulate matter (PM_{10} and $PM_{2.5}$). These pollutants are monitored by Florida to assess whether areas within the state are in attainment with the established National Ambient Air Quality Standards (NAAQS). Emissions of NO_X and VOC contribute to the formation of ground-level ozone, the primary component of what is commonly referred to as smog. On October 1, 2015 the U.S. Environmental Protection Agency lowered the NAAQS for ground-level ozone from 75 parts per billion (ppb) to 70 ppb. Even with the stricter standard, Florida expects to remain in attainment.

Figure 1 shows that vehicle emission standards and continued improvement in traffic flow have reduced fleet-wide pollutant emissions over the past decade. Further reductions are expected with the implementation of the U.S. Environmental Protection Agency's Tier 3 Standards for passenger cars and trucks, even as the number of motor vehicles on the road increases.

Florida is in compliance with the CO, NO_2, O_3, $PM_{2.5}$, and PM_{10} National Ambient Air Quality Standards.

Figure 1: Emissions Trends for Highway Vehicles (Relative to 2002)



SOURCE: Florida Department of Environmental Protection, Division of Air Resource Management

KEY STRATEGIES TO IMPROVE AIR QUALITY

FDOT will help ensure continued progress to improve its core measure of air quality through strategies such as those listed below:

- Congestion reduction and mitigation
- Improved and expanded public transit and increased use of bicycle and pedestrian modes
- Continued involvement in new initiatives to evaluate all facets of emerging autonomous vehicles technology, including environmental benefits

SUPPORTING MEASURES AND INFORMATION

In addition to its air quality core measure, FDOT has identified the following supporting measure:

Carbon Dioxide – CO_2

Carbon Dioxide (CO_2)

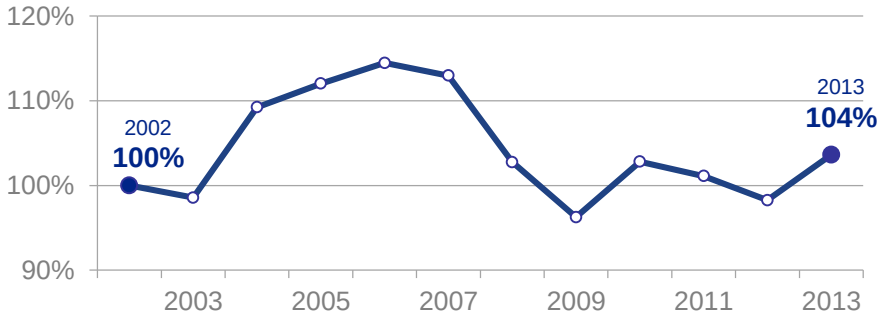
SUPPORTING MEASURE

The combustion of fuel in motor vehicles also results in the release of carbon dioxide (CO_2). Given the large number of motor vehicles, a significant portion of the total statewide CO_2 emissions are from this source. **Figure 2** shows transportation-related CO_2 emissions in Florida from 2002 through 2013. CO_2 emissions from motor vehicles can be reduced through such means as vehicle fuel efficiency improvements, increased use of public transit, and traffic flow improvements.

CO_2 emissions from motor vehicles can be reduced through vehicle fuel efficiency improvements, increased use of public transit, traffic flow improvements, and other means.

Figure 2: CO_2 Emissions from Florida Transportation Sector

(Relative to 2002 Emissions Level)



SOURCE: Florida Department of Environmental Protection, Division of Air Resource Management

Diverse Transportation Energy Sources

Florida's transportation partners are participating in efforts to expand the diversity of the state's transportation related energy sources. An early emphasis has been on compressed natural gas (CNG), liquefied natural gas (LNG), and propane, which are clean burning, domestically produced, and relatively safer and lower priced alternatives. JAXPORT made a major investment in infrastructure and equipment necessary to support container ships using LNG fuel.

ENVIRONMENTAL INITIATIVES

FDOT has identified additional supporting measures and indicators of progress that provide further detail and context about the performance of Florida's transportation system. For environmental initiatives, the supporting measures are:

- Water Quality – Wetland Mitigation
- Project Screenings
- Recycled Pavement
- Alternative Fuel Vehicles

SUPPORTING MEASURES AND INFORMATION

As a prominent employer with statewide visibility, FDOT strives to be resource efficient in terms of finances, processes, materials usage, and environmental stewardship responsibilities. The following sections highlight four varied initiatives that reflect FDOT environmental stewardship in the areas of water quality and wetland mitigation, transportation project delivery, resource recycling, and fleet management.

Water Quality – Wetland Mitigation

SUPPORTING MEASURE

Florida has more water assets than most other states in the nation. More than eighteen percent (18.5) of the state's total surface area is water, compared to 7 percent for the nation as a whole. Florida's water assets represent a key element of its environmental, recreational, and life-sustaining eco-system. FDOT therefore places a high priority on ensuring that transportation does not adversely impact the state's water quality.

FDOT follows various processes to avoid adverse water quality impacts. Where avoidance is not possible, in whole or in part, FDOT takes steps to minimize such impacts, in addition to mitigating impacts as necessary.

Figure 3 shows that FDOT's funding of wetland mitigation increased from $35.9 million in 2010 to $70.5 million in 2015. This has resulted in a total of $328.1 million in expenditures for wetland mitigation through FDOT's purchases of Mitigation Bank credits and funding of mitigation services through Florida's Water Management Districts.

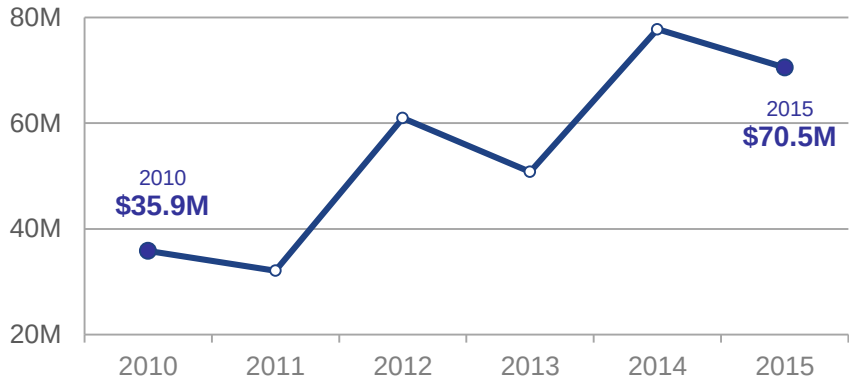
Wetland mitigation is a major focus area for FDOT.

It is important to note that investment in wetland mitigation is not a goal per se with annual targets. These expenditures reflect FDOT's strong commitment to water quality generally and wetland mitigation specifically in conjunction with stewardship-driven project development, but also in compliance with requirements under the Clean Water Act.

Spending between 2010 and 2015 nearly doubled for wetland mitigation, translating into the many benefits associated with wetlands including:

- Flood control
- Wildlife habitat
- Recreation
- Clean water (removing pollutants from water)
- Filtering of drinking water supplies
- Improving fisheries
- Various commercial benefits

Figure 3 Wetlands Mitigation



SOURCE: Florida Department of Transportation, Environmental Management Office

For all capacity adding construction projects, FDOT provides treatment of stormwater runoff to improve the quality of downstream waters. FDOT searches for opportunities to provide cooperative, regional stormwater treatment and beneficially reuse stormwater runoff to augment water supply. This includes multi-purposed activities that typically result in large environmental benefits and cost savings. Additionally, in cooperation with Florida regulatory agencies, FDOT is pioneering the development and implementation of water quality improvement for Florida's springs.

FDOT actively participates in FDEP's Basin Management Action Plans, cooperating with cities and counties to improve the quality of impaired waters. These efforts include educational outreach, elimination of illicit discharges to highways, and regional water quality improvements.

Threatened or Endangered Species

The Federal Endangered Species Act requires that FDOT investigate the potential impacts to threatened or endangered species prior to initiating an activity performed in conjunction with a highway construction project.

The table shows FDOT's expenditures during FY 2013 associated with the assessment and protection of threatened and endangered species.

Type	Costs
Mammals	$166,380
Birds	$1,006,965
Reptiles	$1,409,070
Amphibians	$14,270
Fishes	$55,360
Clams	$26,300
Flowering Plants	$297,120
Other/Multi-Species	$51,050
TOTAL	**$3,026,515**

Project Screenings

SUPPORTING MEASURE

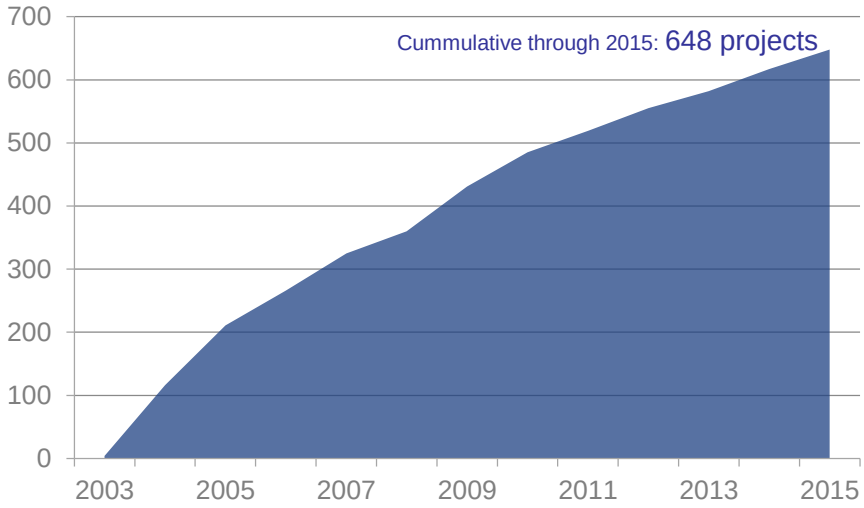
FDOT strives to integrate transportation improvements with surrounding environmental assets as effectively and efficiently as possible. FDOT has made significant progress using the Efficient Transportation Decision-Making (ETDM) project screening process. ETDM screenings occur in the planning and programming stages as an integral part of project delivery. They provide early coordination with environmental resource agencies through the Environmental Screening Tool. Coordination with agencies continues during the Project Development & Environment (PD&E) process when technical studies are completed to address agency concerns. Use of the ETDM process in collaboration with environmental resource agencies helps to avoid, minimize, and mitigate potential environmental effects of proposed transportation projects. It also helps preserve and enhance Florida's natural, physical, cultural, and social environment as FDOT develops, implements, and maintains transportation facilities as cost-effectively as possible.

Process improvements translate into project improvements ranging from early identification of environmental concerns (leading to avoidance or minimization of potential impacts to resources that preserve important environmental and historic assets) to adding project features such as roadway lighting schemes that minimize impacts to protected wildlife species. Mobility that respects the environment enhances and protects Florida's unique quality of life for the long-term.

FDOT collaborates with environmental resource agencies to link land use, transportation, cultural, and environmental planning initiatives. Along with agency-specific data, input from agencies and the public is used to augment identification of issues to help avoid or minimize potential impacts to natural and cultural resources. **Figure 4** shows that the ETDM process was used to screen 648 transportation projects between 2003 and 2015.

Between 2003 and 2015, 648 projects were screened using FDOT's ETDM process.

Figure 4: Projects Screened Through ETDM



SOURCE: Florida Department of Transportation, Environmental Management Office

Future Corridors

The Future Corridors Planning Process addresses Florida's major statewide transportation corridors over the next 50 years. This is a long-term, large-scale decision-making approach. The focus is on transforming existing corridors and developing new corridors in the combined context of environmental, economic development, and community goals. Guiding principles have been developed for the I-75 Reliever and the East Central Florida corridor as part of the corridor evaluation process. Concerns over impacts to wildlife, wetlands and communities are central to the discussions about how to plan these corridors.

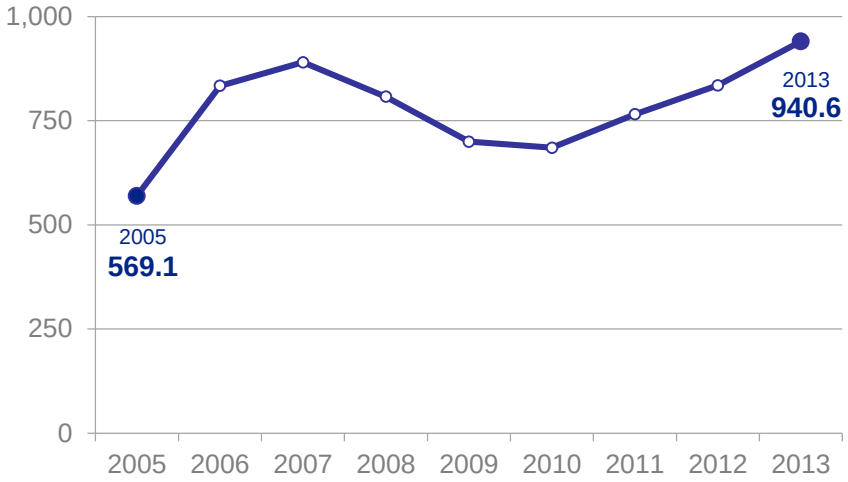
Recycled Pavement

SUPPORTING MEASURE

Recycled asphalt pavement has increased over 65 percent since 2005.

Roadway construction and reconstruction are increasingly using recycled materials for cost savings and environmental benefits. The estimated annual amount of recycled asphalt pavement has increased over 65 percent since 2005. **Figure 5** shows that nearly 941 tons of recycled asphalt pavement were applied to Florida highways in 2013. This was about a 13 percent increase over the prior year and the highest annual tonnage since FDOT started tracking this measure in 2005. In addition, steel, concrete, fill and other materials are occasionally recycled in construction projects.

Figure 5: Tons of FDOT Recycled Pavement



SOURCE: Florida Department of Transportation, State Materials Office

Recycled Asphalt

Florida has been a leader in pavement recycling since the 1970's. Most asphalt made in Florida contains between 20-30 percent of recycled asphalt. Florida is a leader in managing our natural resources while providing a smooth, reliable, and durable ride to its citizens and visitors.

Alternative Fuel Vehicles

SUPPORTING MEASURE

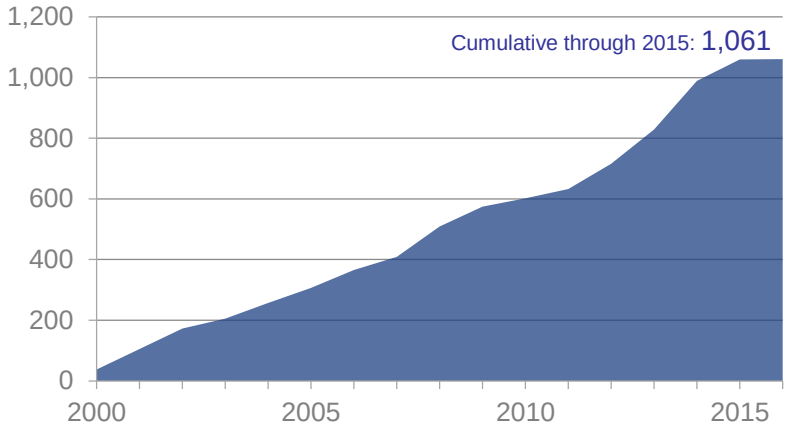
As an environmental steward, FDOT strives to be environmentally responsible in its business practices and operations. **Figure 6** shows that FDOT had 1,061 light passenger alternative fuel vehicles in its fleet by 2015, including:

- 37 bi-fuel (gas/natural gas)
- 17 bi-fuel (gas/propane)
- 1,002 flex-fuel (gas/ethanol-E85)
- 5 hybrid (gas/electric)

By comparison, ten years earlier FDOT's light passenger vehicle fleet had only 335 alternative fuel vehicles. This three-fold increase translates into fuel savings and demonstrates FDOT's active leadership for improving air quality. The vast majority of FDOT's alternative fuel vehicles can be powered by either gasoline or ethanol.

There are currently 2,404 light passenger vehicles in FDOT's inventory, of which 1,061 (44 percent) can be powered by an alternative fuel source.

Figure 6: Light Passenger Alternative Fuel Vehicles in FDOT Fleet



SOURCE: Florida Department of Transportation, Environmental Management Office

ENVIRONMENTAL AND WILDLIFE PROTECTION

FDOT has identified supporting measures and other indicators of progress that provide further detail and context about the performance of the transportation system. For environmental and wildlife protection, they are:

- Miles of Noise Walls
- Wildlife Crossings

SUPPORTING MEASURES AND INFORMATION

FDOT continues to improve the transportation system in ways that demonstrate care for Florida's unique wildlife resources as well as the needs of people. This section highlights FDOT's noise wall investments to mitigate highway noise (typically associated with projects that expand capacity) and consideration of wildlife crossings, which has resulted in approaches to facilitate the safe movement of wildlife over, under or around transportation facilities.

Miles of Noise Walls

SUPPORTING MEASURE

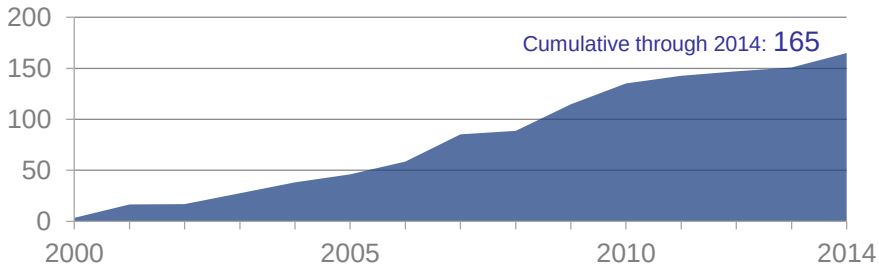
FDOT mitigates noise impacts where it is warranted, reasonable, and feasible to do so. All proposed highway capacity improvement projects are evaluated for potential noise impacts. Where noise impacts are predicted to occur, mitigation normally in the form of noise walls is considered.

Figure 7 shows that through 2014 FDOT installed 515 noise barriers with an equivalent mileage length of 165 miles. Over the past ten years, on average, FDOT installed 12 additional miles of noise walls per year. This is a significant investment in noise mitigation and community quality of life with positive impacts for many homeowners and neighborhoods. Miles of noise walls is an output measure for which data is available. It has an outcome that is more difficult to measure, but no less important, the number of homes, residents or properties that experience noise reduction as a result of mitigation.

Noise walls are not the only strategy for addressing highway noise. The motor vehicle industry, for example, continues to make advances with noise containment and reduction. Trucking companies have successfully deployed technologies that reduce vehicle idling/fuel consumption and the associated noise and pollutant impacts.

FDOT has installed more than 500 noise barriers totaling 165 miles.

Figure 7: Miles of FDOT Constructed Noise Walls



SOURCE: Florida Department of Transportation, Environmental Management Office

Wildlife Crossings

SUPPORTING MEASURE

Florida's natural beauty and quality of life are epitomized by its vast diversity of wildlife. The state is a national leader in developing wildlife crossing structures. FDOT has provided safe crossings for a wide range of indigenous Florida wildlife. Its innovative program provides for numerous types of crossings including:

- Pipe and culvert systems
- Modified box culverts with ledges for wildlife
- Modification of existing bridges to provide dry passage on wood or earthen shelves along edges
- Other methods to enhance motor vehicle/wildlife safety, such as the installation and ongoing evaluation of a Radio-Activated Detection System on a portion of U.S. 41 to warn motorists of the potential presence of the Florida Panther

FDOT provides safe crossings for a wide range of indigenous Florida wildlife.

FDOT routinely seeks out and evaluates innovative approaches to wildlife species protection for potential application to state transportation facilities.

FDOT established guidelines for statewide consistency in determining the appropriateness of wildlife crossings/exclusionary devices. The guidelines also help to provide consistency in the criteria to be considered when designing transportation projects.

Wildlife Crossings

Wildlife crossings like this one on I-75 in Alligator Alley save lives. Thirty endangered Florida panthers were killed in 2014; most were struck while crossing roads in shrinking habitat areas in Southwest Florida.

VIBRANT AND ATTRACTIVE COMMUNITIES

FDOT has identified supporting measures that provide further detail and context about the performance of the transportation system for vibrant and attractive communities. They are:

- Designated Scenic Highways
- Satisfaction with Florida Highways
- Roadside Attractiveness
- Roadsides Kept Litter Free
- Transportation Alternatives
- Transportation Disadvantaged Trips

SUPPORTING MEASURES AND INFORMATION

This section provides examples of the range of FDOT programs and activities that promote vibrant and attractive communities. FDOT makes a consistent effort to keep roadsides litter free as well as pleasing to the eye through various landscaping and beautification efforts. Some of our roadways traverse scenic vistas and have been designated as scenic highways. Further, FDOT invests in transportation alternative/enhancement projects that provide tremendous community benefits. Finally, support of transportation disadvantaged trips helps many people connect with their communities who otherwise would have limited or no mobility options. Having transportation is essential for maintaining quality of life for many of those who benefit from this service. Others benefit as well from the ability of those receiving the service to become active participants of the communities in which they live.

Highway Beautification

It is the policy of FDOT to conserve, protect, restore, and enhance Florida's natural resources and scenic beauty. The state strives to have the nation's most beautiful highways with safe roadsides that are durable, and ecologically and economically sustainable.

FDOT is implementing roadside beautification projects using large trees and shrubs. With thoughtful site-specific design, this approach will produce a visual impact with a distinctive sense of place at a low design, construction, and maintenance cost. Tall trees generously and safely placed at highly traveled interchanges and gateways into and through Florida communities create a welcoming and enjoyable experience, a first and lasting impression of the state and individual communities.

As FDOT's highest priority roadside landscapes are completed, beautification can be routinely integrated into the processes used to plan,

design, construct, and maintain roadways—roadways that accommodate bold performing landscapes that enhance private enterprise and public health, safety, and welfare. Roadside landscape projects, in addition to being aesthetically pleasing, can mimic natural processes that manage stormwater, filter air, shade pedestrians, conserve energy, and provide wildlife habitat.

Designated Scenic Highways

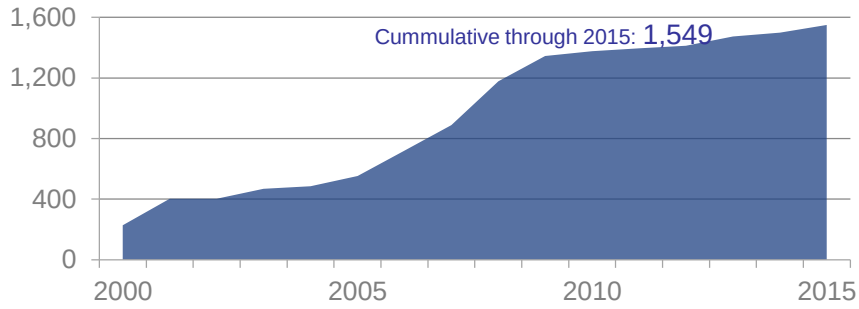
SUPPORTING MEASURE

FDOT's Scenic Highways Program promotes Florida as an attractive destination for travelers. **Figure 8** shows that Florida has 1,549 miles of designated scenic highways. Among Florida's 26 Scenic Highways, six have been designated National Scenic Byways and one (the Florida Keys Scenic Highway) was awarded the special All-American Road designation. For more information go to www.floridascenichighways.com.

Florida's designated scenic highways promote a heightened awareness of the state's exceptional resources and unique history through educational and visual experiences. FDOT's Scenic Highways Program was established to showcase outstanding cultural, historic, archaeological, recreational, natural and scenic resources along the state's highway system. The program promotes awareness of unique resources valued by Florida residents and visitors. It also focuses on locally based management while seeking to promote regional economic benefits that may result from scenic highway designations.

Of Florida's 26 Scenic Highways, six have been designated National Scenic Byways, and one was also awarded the special All-American Road designation.

Figure 8: Miles of Designated Scenic Highways



SOURCE: Florida Department of Transportation, Environmental Management Office

A1A Scenic & Historic Coastal Byway

This byway lies between the Atlantic Ocean and the Intracoastal Waterway on a narrow barrier island with breath-taking views. This byway supports a variety of wildlife, including 50 endangered species. Families enjoy touring the 72-mile byway from its northen terminus in Ponte Vedra Beach heading south to the oldest continually-occupied European settlement in the USA at St. Augustine, then heading past the nation's first oceanarium, Marineland, before terminating at the Tomoka Marsh Aquatic Preserve.

CUSTOMER SATISFACTION SURVEYS

Since 2000, FDOT has regularly surveyed Florida residents, visitors, commercial drivers, and public officials about our transportation products and services. The survey results help FDOT track its progress in improving customer satisfaction and to identify any areas that might require special attention.

FDOT conducted its most recent biennial customer satisfaction surveys in 2014 (August through December). More than six thousand (6,830) people responded, including Florida residents (3,189), visitors to Florida (403), public officials (432), and commercial drivers (2,806).

More than six thousand (6,830) people provided feedback through FDOT's 2014 customer satisfaction survey.

The following highlights from the customer satisfaction survey provide resident and visitor impressions of the quality of Florida's roadsides. For a complete review of FDOT's customer survey results, please visit the Florida Customer Satisfaction Survey webpage at: www.dot.state.fl.us/planning/customers. For customer satisfaction, FDOT's supporting measures are:

- Satisfaction with Florida Highways
- Roadside Attractiveness
- Roadside Kept Litter Free

Customer Satisfaction Improvements

Improved Satisfaction – 2014 compared to 2004:

- Access to businesses during construction (59% in 2014 vs. 58% in 2004)
- Timeliness of completing construction (43% in 2014 vs. 32% in 2004)
- Local input on roadway design (75% vs. 70% in 2004)
- Local input on statewide plans (85% vs. 71% in 2004)
- Local input on roadway priorities (80% vs. 67% in 2004)
- Feedback on how priorities were considered (72% vs. 62% in 2004)

Satisfaction with Florida Highways

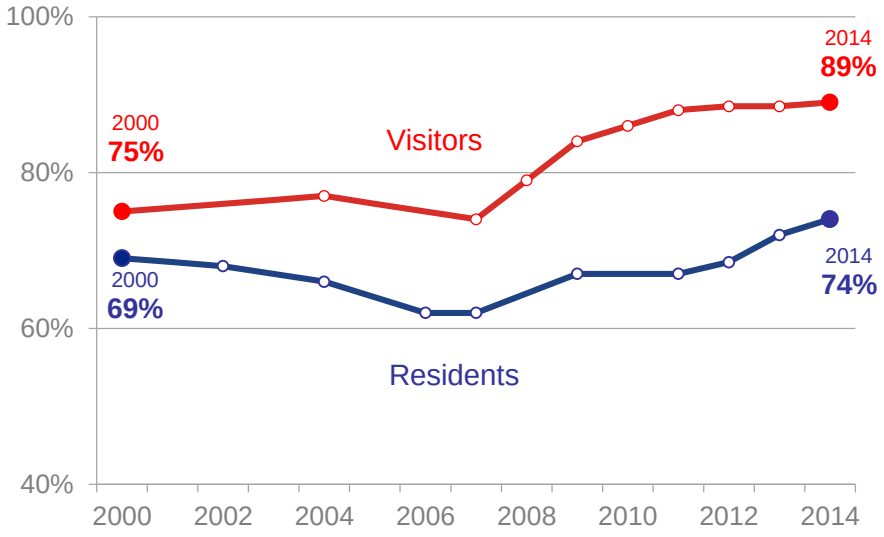
SUPPORTING MEASURE

89 percent of Florida visitors are satisfied with the State Highway System.

FDOT appreciates that the travel experience itself has significant value for transportation system users. Residents spend a considerable amount of time on Florida roads. For visitors, Florida roads play a vital role in the impressions formed of our state. For these and other reasons, FDOT periodically surveys residents and visitors as to their satisfaction with Florida roads.

Figure 9 shows the perception of Florida visitors and residents on satisfaction with the State Highway System (SHS), which has been increasing since 2007—74 percent to 89 percent for visitors and 62 percent to 74 percent for residents. This is an impressive gain over the period with the vast majority of both visitors and residents being satisfied with the SHS. This may be FDOT's most important metric for customer satisfaction.

Figure 9: Percent of Residents and Visitors Satisfied with the SHS



SOURCE: Florida Department of Transportation; Florida Resident and Visitor Customer Surveys, Statewide Detailed Results (2000-2014)

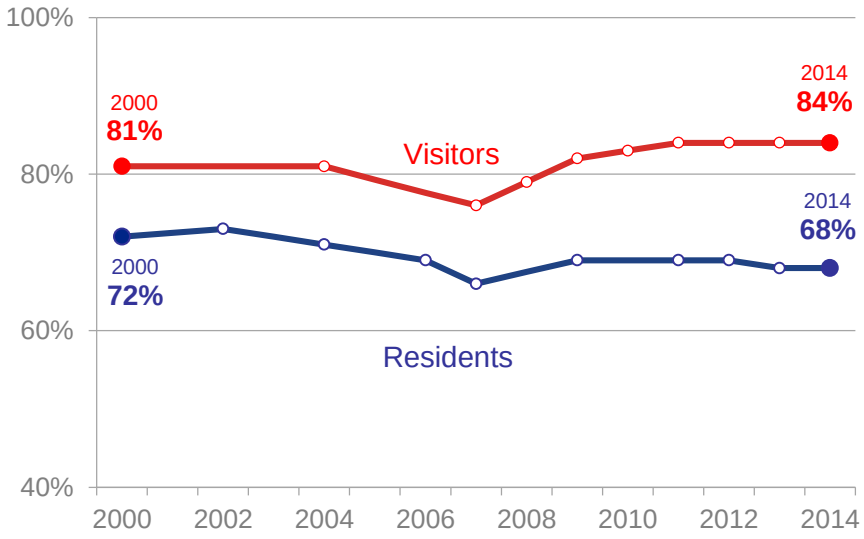
Roadside Attractiveness

SUPPORTING MEASURE

84 percent of Florida visitors feel that State Highway System roadsides are attractive.

Figure 10 shows the perception of Florida residents on roadside attractiveness for the State Highway System (SHS) decreased between 2000 and 2007 from 72 percent to 66 percent, but increased slightly thereafter to 68 percent. Similarly, visitor perception of SHS roadside attractiveness decreased between 2000 and 2007, and then rebounded to 84 percent. The large difference in perception between residents and visitors suggests that Florida's roadside conditions might be better than in many other states.

Figure 10: Percent of Residents and Visitors who Feel Roadsides on the State Highway System are Attractive



SOURCE: Florida Department of Transportation; Florida Resident and Visitor Customer Surveys, Statewide Detailed Results (2000-2014)

DRIVE IT HOME

FDOT, in partnership with the Federal Highway Administration, has launched a multi-year litter prevention education campaign. The message "DRIVE IT HOME…Keep Our Paradise Litter Free" is promoted statewide on billboards, television, radio, buses and social media. Sports and entertainment celebrities promote the message and community challenges have been offered to help tackle the litter problem.

Roadside Kept Litter Free

SUPPORTING MEASURE

FDOT manages an Adopt-A-Highway program and installs signs to discourage littering. In addition to the Adopt-A-Highway program and its volunteer resources, FDOT maintenance crews routinely remove highway litter. Various county-level efforts to discourage litter are also undertaken.

Volunteers enter into a two-year agreement with FDOT, agreeing to conduct litter removal at regularly scheduled intervals.

Volunteers agree to:

- "Adopt" a two-mile section of a state highway
- Dedicate two years to the program
- Follow specified DOT safety regulations
- Remove litter a minimum of four times each year

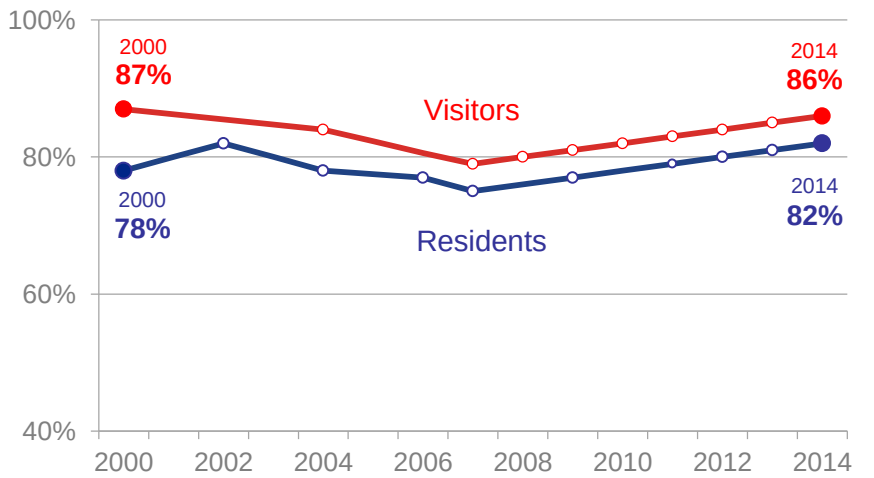
FDOT agrees to:

- Assist with safety meetings
- Provide safety vests and litter bags
- Pick up litter at specified locations
- Post Adopt-A-Highway signs commending organizations at both ends of their section.

A litter-free roadway is a highly ambitious goal since littering occurs daily. **Figure 11** shows that 86 percent of visitors to Florida perceive SHS roads to be litter free, while 82 percent of Florida residents have a similar perception. This is an extremely favorable rating when considered in light of the aspirational goal of being "litter-free."

86 percent of Florida's visitors feel that State Highway System roads are litter free.

Figure 11: Percent of Residents and Visitors who Feel Roadsides on the State Highway System are Litter Free



SOURCE: Florida Department of Transportation; Florida Resident and Visitor Customer Surveys, Statewide Detailed Results (2000-2014)

Transportation Alternatives

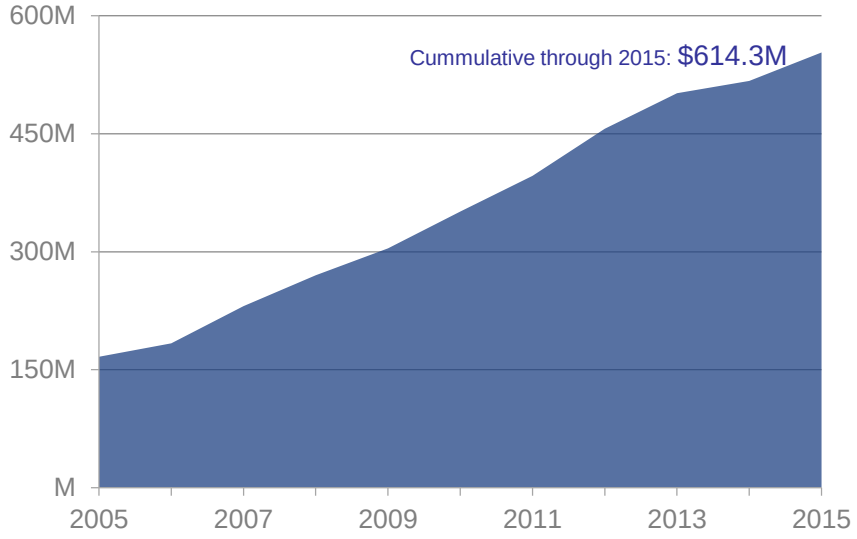
SUPPORTING MEASURE

Community visions and values are supported through implementation of projects under the federally funded Transportation Alternatives (TA)[1] program. FDOT currently receives an average program allocation of federal funding of about $50 million per year. TA projects can be community-based projects that expand travel choices and enhance the transportation experience by improving the cultural, historic, aesthetic and environmental aspects of the transportation system. They can expand travel choice, strengthen the local economy, improve the quality of life, and protect the environment. On- and off-road pedestrian and bicycle facilities, improved access to public transit, community improvement activities, environmental mitigation, recreational trails, and safe routes to school projects are examples of TA projects.

FDOT has collaborated with numerous communities over the past two decades to provide opportunities to enhance community visions and interests through TA projects. **Figure 12** shows that these coordination efforts have resulted in the completion of 1,746 TA projects and investment totaling more than $614 million since 2000. This is a tremendous way for transportation to contribute to quality of life across Florida.

FDOT has programed over $614 million for Transportation Alternatives and Transportation Enhancement projects since 2000.

Figure 12: Transportation Alternatives & Transportation Enhancement Project Funding



SOURCE: Florida Department of Transportation, Environmental Management Office

[1] New federal legislation enacted in December 2015 called the "FAST Act" makes further changes in the funding for these projects.

Transportation Disadvantaged Trips

SUPPORTING MEASURE

Lack of transportation is one of the greatest barriers to community engagement. The transportation disadvantaged (TD) are people who are unable to transport themselves or purchase transportation because of physical or intellectual disability, income status, or age. The provision of trips is their means for accessing employment, health care, education, and participation in community and other activities. These trips include both fixed route and demand response transportation, and are provided through a Coordinated Transportation System.

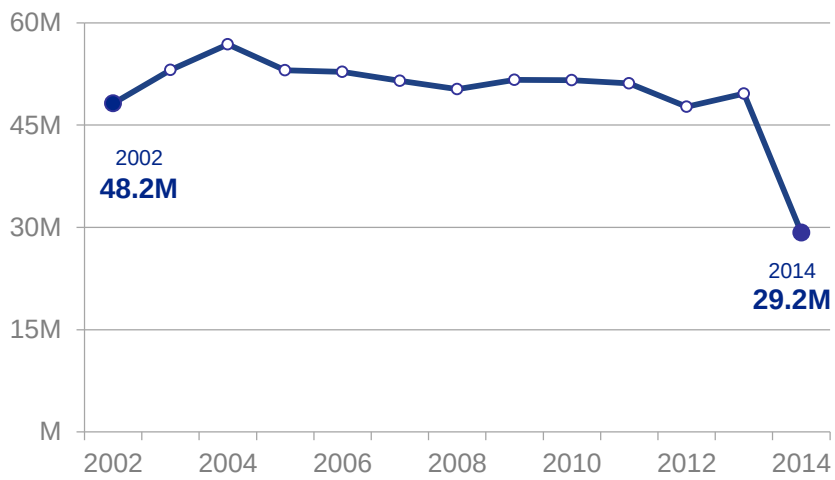
Transportation disadvantaged trips fall into five categories:

- Medical
- Employment
- Education / Training / Day Care
- Nutritional
- Life Sustaining / Other

Figure 13 shows that in 2014 nearly 30 million transportation disadvantaged trips were provided across Florida, which appears to be a significant decrease (over 41 percent) from the previous year. However, the decrease is based on a change in methodology for allocating trips for monthly and weekly bus passes. Previously the Florida Commission for the Transportation Disadvantaged (CTD) counted 40 trips for each monthly bus pass and 10 trips for each weekly bus pass. This was based on the assumption that people were using bus passes to travel to and from work. Over time, this assumption proved to be incorrect. While some people do use their bus passes for employment, most people use them for medical/social service appointments and other life-sustaining trips. If the previous year's methodology had been used, the system would have shown 48.6 million versus 29.2 million trips for 2014.

The number of transportation disadvantaged trips decreased due to a change in the methodology on how trips are counted.

Figure 13: Transportation Disadvantaged Trips (millions)



SOURCE: Florida Commission for the Transportation Disadvantaged - Annual Performance Reports

According to the Florida CTD, in 2014 medical and life-sustaining trips were the top purposes for people riding the Coordinated Transportation System, which accounted for nearly 74 percent of trips. Education trips accounted for 11 percent followed by employment trips at 10 percent, with nutritional trips at nearly 5 percent.

Commission for the Transportation Disadvantaged

The Florida Commission for the Transportation Disadvantaged (CTD) is an independent agency responsible for the coordination of transportation services for older adults, persons with disabilities, persons of low income and children at-risk. The Transportation Disadvantaged Program enhances the mobility of Floridians to achieve independence by providing medical, employment, education and other life sustaining trips to nearly 600,000 Floridians.

HEALTHY COMMUNITIES

In addition to its core and supporting measures, FDOT has identified several topics that provide further context about the performance of Florida's transportation system for healthy communities. These topics are:

- Safe Mobility for Life
- Public Health and Transportation

Safe Mobility for Life Program

FDOT participates in the Safe Mobility for Life Program (formerly The Elder Road Use Program) which promotes transportation safety for seniors. Recent progress is particularly significant in light of Florida's large and growing senior population:

- An Aging Road User Survey is conducted most years (2011 is the baseline)
- More aging road users have heard of the Safe Mobility for Life Coalition (11 percent in 2013 as compared to 10 percent in 2012)
- 15 percent of survey respondents are preparing for when they can no longer safely or comfortably drive

Public Health and Transportation

The U.S. Department of Transportation and other agencies and stakeholder organizations are focusing on the connection between public health and transportation, recognizing that community design and active transportation (e.g., walking and bicycling) can contribute to wellness and reduced costs associated with chronic disease. See transportation.gov/transportation-health-tool. The Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) promote health through their policies and programs. FHWA, FTA and FDOT have made significant investments in transit infrastructure; bicycle and pedestrian plans, coordinators, and facilities; Safe Routes to School programs; road safety; air quality improvements and congestion reduction; and the management and operations of regional transportation systems.

Transportation Health Tool

The Transportation and Health Tool (THT) was developed by the U.S. Department of Transportation and the Centers for Disease Control and Prevention to provide easy access to data that practitioners can use to examine the health impacts of transportation systems. Florida ranks in the top quartile compared to other states.

FOR THE FUTURE

FDOT strives to be forward thinking in regards to performance measurement. Many measures can be valuably used year after year. But DOTs and the states they serve continue to both lead change and adapt to change. This year we are introducing a section in each performance chapter that identifies potential measurement considerations for the future.

Water Quality

Water quality is an important component of both quality of life and environmental stewardship. FDOT engages in a wide range of activities to prevent, minimize, avoid, or mitigate water quality impacts (e.g. wetland preservation).

Efficient Transportation Decision-Making (ETDM) Process

FDOT carries out many activities in relation to the ETDM process. Presently our reported measures focus primarily on the number of projects that go through ETDM. There may be opportunities for broader reporting that reflects how FDOT protects the environment.

Complete Streets

Florida has made many advances with Complete Streets as the concept has taken hold in Florida and nationally. As it expands, new and meaningful ways of reporting performance may develop.

Landscaping

FDOT does an extensive amount of landscaping as a routine program activity. Consideration could be given to measures that reflect the extent of FDOT's effort in this area and the associated benefits.

Land Use

Transportation and land use linkages have been gaining greater attention nationally for good reason—land use impacts transportation and vice-versa. As Florida makes further advances in coordinating land use and transportation, we will be challenged in a positive way to measure benefits in a way that demonstrates progress.

Public Involvement

FDOT is a national leader in the area of public involvement and is highly engaged on both the state and nationals level to develop ways to measure its efforts to engage the public in its plans and projects.

Visioning

FDOT works with communities and regions on developing and implementing visions, with various partners on developing and implementing corridor oriented plans and repurposing urban roadways (e.g., lane elimination process and assistance with projects with complete streets elements), and with local governments on major updates to their comprehensive and transportation plans. In addition, FDOT provides technical assistance, with applied research playing an increasing role as we engage our partners to improve planning processes and outcomes.

Public Transit

New public transit options have been or are being studied and brought on line (e.g., SunRail, express bus on interstates in southeast Florida, FDOT leadership for the PD&E study for the Tri-Rail Coastal Link project, etc.).

LED Lighting

Light-emitting diode (LED) lighting can be used for roadway and pedestrian lighting since they are more energy efficient than current lighting technology. LED lights last longer, thereby reducing the need to replace them as frequently, which can reduce maintenance costs while improving safety. A potential measure could be number of units, miles of LEDs replacing conventional lighting, or miles of LEDs installed (which would capture both replacements and new facilities or newly illuminated facilities).

Additional Future Considerations

Other potential considerations for the future include: expanded coverage of alternative fuel vehicles, combined housing and transportation costs, provision of access to essential services (i.e., FHWA/FTA "ladders of opportunity" planning emphasis area for state DOTs and MPOs), access to transit and transit ridership for CO_2/greenhouse gas emission reduction, and the implementation of transit oriented development in Florida.